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EDITORIAL.

ON the twenty-fifth of last month, at a dinner given by nearly eighty physicians of this city to one of their number who was about to accept a position in a neighboring town and a professorship in its medical school, the guest of the evening made some remarks which, at the time, produced a profound impression on the company, and elicited loud applause. He said, in effect, that the time is rapidly approaching when a question would force itself upon the attention of the profession, and would demand most careful and thorough consideration, viz.: the propriety of consultation with so-called homœopaths. While he disclaimed utterly any belief in their therapeutical theories, it is not to be disputed that there are among them a large number of men who, by education and social qualities, are competent practitioners. An important element of the question is, the fact that our predecessors, from whom we receive our ethical code, have so interpreted its rules that its enforcement has enabled the homœopaths to appear before the community at large as martyrs in a just cause, and one result has been that they count among their sympathizers many of the most intelligent and influential members of society. The speaker then proceeded to suppose cases which might arise in the practice of any physician, in which the duties imposed upon all of us by a common humanity would require that he should co-operate with a homœopathist in spite of ethical rules. Another speaker followed him in the same vein, and it was evident from the attention which the company gave, and the enthusiasm of their applause, that the sentiment met with a ready endorsement.

Now the company was not a mere handful of unheard-of and uninfluential men; but, although mostly composed of the younger members of the profession, some are professors in medical schools, many are connected with prominent hospitals and dispensaries, and are officers in our medical societies; and a few of them, including the speaker, were the champions of the recent demonstration in the "Presbyterian Hospital Affair."

Another fact, quite apparent to one familiar with the company, was the large proportion of those whose attention is devoted to some specialty in

practice, and this we purpose making the text of what we have to say further on this subject.

At the outset we agree with the sentiments expressed at the meeting—that it is unfortunate that our predecessors should have made the mistake of allowing a question of therapeutics, rather than that of sufficiency of medical education, to be the dividing line between "regular" and "irregular" practice. However quixotic and improbable a man's practice and theories may be, he gains the confidence of persons unable to judge of their merits just in proportion to the opposition he meets with, and suffers most from quiet neglect.

What we wish particularly to call attention to, however, is the apparent growth of sentiments favorable to the homœopathic fraternity among "regular" specialists. It will readily be perceived that, as a class, the latter are more likely to be benefited by an abolition of the ethical obstacles to consultation with "irregulars" than the general practitioners will be, and it is very apparent that any attempt to reorganize our ethics in this regard will most likely find its initiators among them. The questions involved are numerous, however, and their settlement is by no means likely to be an amicable one.

As it is, the general practitioner is having a hard time of it. First, he gave up the dispensing of his remedies to the apothecary; and now complains that so many people use patent medicines and go to the apothecary for both medicine and advice. Then the specialists organized; and, to supply themselves with clinical material, opened special dispensaries and hospitals where all who come are treated, and little or no pains is taken to limit the charity to the really poor. Then, by the aid of the notoriety gained through their connection with such institutions, and the multitude of medical schools, the specialists monopolize the greater part of the practice among those who prefer to pay; so that the general practitioner is deprived both of his opportunities for acquiring a knowledge of special affections; of his patients, who prefer to go to a dispensary or hospital where they can be treated gratis by specialists, and of the patronage of those who, being abundantly able to pay, prefer to consult the man who has become noted through his superior facilities for advertising the attention he gives to one department, rather than trust the case with the general practitioner; and so, to save himself from bankruptcy, the latter, too, must needs set up his specialty.

Now the natural result of all this is, that about the only general practitioners left will be the older men, who have secured their position, and continue to practice because it is easier to keep on than it is to stop or change, and the "homœopaths," who have not been allowed to enter the hospitals and dispensaries, and, *per force*, have not developed their talents in special ways, but have employed their time and energies in getting sympathizing patients.

Between dispensaries, hospitals, college cliniques, and the rapid increase of their fellows, our friends the specialists are rapidly exhausting their available resources; and it cannot be wondered at that they should deeply appreciate the needs of the "general practitioner" in homœopathy, and his unfortunate patient, for skilled advice and assistance in their dilemmas.

A NOVELTY in the business of some of the apothecaries of this city is the sale of milk and cream for the use of invalids and infants, which they warrant to be pure, fresh, and wholesome. There are few more useful ways in which the technical skill of the pharmacist can be utilized than in insuring to the parents of infants who have to be fed artificially during summer months, and are not able to leave the city, a supply of good cow's or goat's milk, and cream.

Since the Health Board has resorted to and recommended the use of the lactometer as the standard for testing the purity of milk offered for sale in the city, the stock of some dealers may have been very much improved in specific gravity; but it is our experience that one, at least, who used formerly to furnish milk as good in every respect as could be had in the country, has taken advantage of the lactometer test to reduce considerably the amount of cream which his milk contains. We say *he* has done so; but it is quite as likely that the producers in the country from whom he obtains his supply, and who read the papers have profited by the published discussion between Professor R. O. Doremus and his friends on one side, and Professor C. F. Chandler on the other, and are now fully posted as to the ways of increasing the specific gravity of milk by skimming and the addition of skimmed milk, and reducing it by water, and are now quite prepared, when the quality of their milk is discussed, to produce their lactometers and the regulations of the Health Board as their witnesses, and sneer at the people who are never happy when not finding fault with somebody or something.

It is the casein of cow's milk which, in most instances, renders this food difficult of digestion by the infant stomach; and this fact has often led to the use, instead, of the milk of goats and mares when it could be obtained; but it is well known that the milk of Jersey (sometimes called Alderney) and Ayrshire cattle, contains a relatively much larger proportion of fat-globules than that of ordinary breeds; and it is therefore possible, in reducing such milk with water or barley-gruel, to lessen still more the proportion of cheese, and yet preserve enough of the cream to furnish an infant with a good food within a reasonable compass as regards the total amount.

There are already a considerable number of milch cattle of pure or nearly pure Jersey and Ayrshire blood, kept within accessible distance of New York and Brooklyn by gentlemen who own farms, and take commendable pride in their stock. Such persons could be trusted to furnish milk of the best quality, and uncontaminated by typhoid and scarlatina, or the poisons of surface drainage, and it seems a pity that such milk should be turned into the cans of the general dealer when it can be of so much use to feeble invalids and growing babies. We hope, therefore, that such of our pharmaceutical friends as undertake to make this addition to their business, will remember that, although pure, healthy, unadulterated milk is a very good and rare thing, there are some kinds of milk which, for the feeding of babies and invalids, are much better than others; and that the public have a right to expect that, as scientific men, they will give their customers the benefit of their skill, and not trust solely to the chemistry of the *Herald* reporter and a Health-Board Lactometer in the selection of their wares.

Owing to the amount of matter, which seems to us of more importance than the detailed description of new patents which we have heretofore given, we have thought best to make the change which will be observed in this portion of the journal; and will hereafter furnish any of our subscribers, who may desire it, such details in relation to patents, either recent or old, as we can obtain from the records of the office.

M. Balard, the discoverer of bromine, died recently in Paris. He was born in 1802, and commenced business as a pharmacien. At the time of his death he was Member of the Academy of Sciences and Professor of Chemistry in the College of France.

NEW YORK DRUG MARKET.

[*Prices given are for round lots from Importers' and Manufacturers' hands. For single packages an advance would be charged.*]

With the exception of some few leading articles, there seems to be but little life in the trade; and the small demand that exists is only to supply pressing needs. The prices for some articles ought certainly to tempt investment; for they have reached, in many cases, lower figures than have been known for twenty years; and were it not for the discouraged feeling and over-timidity that all capitalists feel in any venture just now, many of our articles would be largely bought to hold for a rise. The Western trade are still ordering freely, and the city jobbers are actively engaged filling orders; but other sections seem more quiet.

Opium has fallen off since our last to $5.00 gold. The advices from Turkey report the crop as doing finely, plenteous rains having fallen, and no material damage from frost having occurred. The only remaining danger is from heavy rains during the time of gathering, which sometimes affect the crop very seriously. In the season of 1868–'69 this was the case, and very high prices were reached in consequence. In any event the present price is a low one, and parties investing in it would no doubt realize during the next six or eight months a handsome profit.

Morphia is quiet and unchanged, manufacturers asking $4.10 by the case.

Quinia is in good demand, the price remaining, as last reported, at $2.20 per oz.

Quicksilver has sold moderately, but at prices a little easier than in our last. 62c. @ 63c. gold seems to be the general jobbing price, large lines being obtainable at a somewhat lower figure.

Borax quiet, and but little change to note. City sells at 11¼c. @ 11½c.; California 10¾c. @ 11c.; this last being a little lower.

Blue Vitriol in moderate demand at previous prices, 8c. @ 8¼c. as to quantity.

Citric Acid in small demand for the season, and prices remain as last reported, viz.: 78c. @ 79c. gold.

Copperas unchanged, and the demand moderate, dealers obtaining 1⅛c. @ 1¼c. for small lots.

White Sugar Lead has been in active demand, one manufacturer being unable to deliver except upon back contracts. The price has in consequence stiffened up, and 17½c. @ 18c. is demanded.

Camphor has been pretty well concentrated into the hands of a few holders, and 27c. is easily obtained. The arrivals of crude stock have been light, and a decline is not looked for.

Chlorate of Potassium remains as last reported, the market for English being 21½c. gold, for quantities, French selling at a slightly higher price.

Iodide of Potassium without change, P. & W. and C. P. & Co. selling at $2.25 in bulk and $2.33 in bottles.

Carbonate of Ammonium is unchanged, the market being firm at 13½c. gold for English; Dodge & Olcott's American, 17½c. @ 18½c. for bbls.; jars 18½c. @ 20c., jars extra.

Tartaric Acid in better demand at 42½c. gold for crystals, powdered bringing 49c. @ 50c. in bbls. and bxs.

Cuttle-Fish Bone selling slowly at 27c. Stocks are light and dealers are not anxious to sell.

Venice Turpentine in small demand at 17½c. Little has arrived, but dealers do not care to hold through the warm weather.

Burgundy Pitch is nominally held at 7⅞c., but could be bought under this figure, several lots being offered on the market.

Balsam of Copaiba is without change, the principal holders remaining firm in their price. 75c. is demanded for small lots.

Balsam of Tolu.—Some recent arrivals have been taken up, second holders now asking $2.25 by the case.

Aloes.—Cape are unchanged, prices ruling as last reported—13½c. @ 14c.; Socotrine, 40c. @ 60c.; Barbadoes, 26c. @ 28c.

Cubebs are lower, recent arrivals having forced the price down to 9½c. @ 10c.

Squills dull, and quiet at 11c. for prime white.

Manna.—Small Flake in moderate demand, at about previous prices; Large Flake brings $1 @ $1.10 for new crop of prime quality.

Gum Assafœtida is weak, and lower for some grades of poor quality. Prime descriptions, however, bring nearly full price, being quoted at 14c. @ 15c.; low grade, 12c. @ 13c.

Gum Arabic of all grades is reported higher abroad, but little change has taken place here, the only perceptible effect being to stiffen holders somewhat in their prices.

Rhubarb is in fair demand at prices a little firmer, the foreign markets being short of stock of some grades.

Ipecac. dull and without change, holders still asking $1 gold for prime root. This price could, however, be shaded a trifle.

Colombo Root of good quality held for 8c., this grade being rather scarce. Lower grades can be had for 6c. @ 7c.

Gentian Root selling in a small way at 7c., no change having occurred since our last.

Ginseng is almost out of the market, the stocks in the country being about exhausted. Dealers would pay $1.30 @ $1.35 for prime quality, but there is little to be had even at that.

Seneka Root quiet and nominal, dealers not wishing to buy until the new crop shows itself; 70c. is about the market for prime Southern.

Jalap without change of moment. Dealers are selling as wanted at 11½c. @ 12½c. for prime root.

Castor Oil continues on the decline, Baker's H. H. being obtainable as low as 11c. for cases. Good brands of Western Oil can be had even lower. The course of this article has surprised everybody, as few expected to see it go below 12c. The present price is lower than it has been for fifteen years, and is one at which manufacturers cannot make without loss. We think, therefore, that an advance must take place before many months.

Canary Seed has further declined, the arrivals having been large. At this writing prime Dutch can be had for $5.50; Smyrna, $5.25.

Hemp Seed without change, selling as wanted at $1.85 @ $1.90.

Oil Lemon has been in good consumptive demand, and has been largely sold in a speculative way. Sanderson's is now held at $3.50, gold, large sales having been made at $3.25, gold.

Oil Bergamot has also been active, and has sold up to $4.50, gold, for Sanderson's. Just now, however, it is somewhat easier, and could be had for $4.25, gold, which is the price at closing.

Oil Anise without material change, and can be had at $1.60, gold.

Oil Cassia has fallen off, and can be bought to-day for 94c. gold.

Oil Sassafras, under recent large arrivals, has declined, and sold as low as 52½c. Some large lots pressing on the market have been sold, and a recovery is looked for.

Oil Peppermint has not changed materially, H. G. H. bringing $4.12½; L. B. H., $4.

MATERIA MEDICA.

Remarks on Rhubarb and Rheum Officinale.

Abstract from a paper by Prof. F. A. Flückiger, *of Strassburg.*

It will be recollected that some years ago (1867) Mr. Dabry, the French consul in Hankow, succeeded in obtaining living roots of the mother-plant of rhubarb, which were sent to the Société d'Acclimatisation, in Paris, and, although badly injured, were brought to full development through Dr. J. L. Soubeiran. The species was determined as a new one (*Rheum officinale*) by Baillon, and its technical description may be found in the journals of 1868 and the following years. Since then, the plant has been grown at other places, and according to Prof. Flückiger, is so handsome as even to deserve a place as an ornamental plant in public parks and gardens. At Flückiger's desire, Hanbury induced the proprietors of the great rhubarb plantations in Bodicott (Oxfordshire), Messrs. Rufus Usher and Sons, to grow the new variety and prepare some for market. The result—on the small scale—has shown that careful treatment will undoubtedly produce from it rhubarb exactly identical with the best Chinese.

Notwithstanding the uniformity of the present sorts of rhubarb of commerce, there have been those who believed the so-called Russian variety to be derived from another source. Berg, for in-

stance, supposed that this (now uncommercial) variety of rhubarb was derived from another source, and occasionally *Rheum palmatum* was designated as such. Still, this species, when cultivated in Europe, yielded roots which were entirely different from the genuine. But in 1872 Przewalski obtained a species in the alpine territory of Tangut (about 37° N. L. and 100° E. L. Greenwich), in the province Kansu, which was afterwards described by Maximowicz as *Rheum palmatum* var. *Tanguticum*, and which is, according to Russian botanists, the true source of the genuine "Russian" rhubarb. It is, however, doubtful whether this statement is correct, especially on account of the great distance between Tangut and Thibet (the habitat of *Rheum officinale*).

It may be of interest to inquire into the history of the officinal rhubarb, and to search for the commercial route upon which it reached Europe. It appears that the Chinese have made use of the drug several thousand years before our era,* and according to Lassen's investigations caravans went, in ancient times, from central China to western Asia. In this way rhubarb may have reached Europe. Without attempting to discuss the question, whether *Rha ponticum*, *Rhacoma* or *Rha* of the later Latin authors, is identical with the modern rhubarb, we find the term *Rheum barbarum* or *barbaricum* in use in the 6th century of our era, and this is undoubtedly to be referred to our drug. In favor of this opinion is, among others, the statement in the great geographical work of China: *Taï tsing i-thoung-chi*, Book 116, fol. 19, "that rhubarb (taï hoâng) is a product of the province Si-ning-fû, east of the lake Kokonor in the modern province Kansu," and that it occurs in the history of the Tang dynasty as tribute of the district Kouoh-cheou in Tangut. This dynasty reigned from 618 to 905, that is, during the very time when *Rha barbarum* was mentioned in Europe. Although these statements do not prove the absolute identity of the Chinese drug taï hoâng "the large yellow" (sc. root) with *Rha barbarum*, still they make it appear more than probable.

In harmony herewith is the report of *Edrisi*, the celebrated Arabic geographer of the Middle Age. The particular text, referring to rhubarb, of his work, which was written in 1154, and is based upon oral reports of travelers and the whole then existing literature, is as follows:† "Here also grows the rhubarb of China; this root is found here in abundance; it is exported to many eastern and western countries." The places designated by Edrisi are the mountains near Buthink, where, according to him, also Nardus (*Nardostachys Jatamansi*, *DC*). grows, on which he says the musk-deer feeds. According to Prof. Sprenger, these statements refer to the country between Hlassa and the Tengri-nor, the great alpine lake of north-eastern Thibet.

Rhubarb is next mentioned, among a large number of products of Central Asia and India, in the catalogue of the custom-house of Saint-Jean-d'Acre (Accon) in Palestine, during 1173—1183.*

Bürk, in his edition of Marco Polo's travels,† mentions whole cargoes of rhubarb, which were found by the troops of Genghiskhan 1227 at the capture of the city of Ling-cheu (or Lan-cheu-fu), east of Sining. Marco Polo himself, the great traveler of the Middle Age, penetrated as far eastward as Tangut (1273), which province is named in numerous reports as the home of Rhubarb. While speaking of Suctur, the present province of Kansu, he says:‡ "The great chief-province, in which lie these three provinces, is Tangut. And in all mountainous districts of the provinces rhubarb is found in great abundance. And there the merchants purchase it and carry it through all the world;" and, further on:§ "Siguy [=Sining in the western portion of the province Shen-si] is a very great and noble city . . . . it has so many inhabitants, that they cannot be counted, . . . but they are not warlike people, but merchants and people of great cunning and expert in handicrafts . . . and there are many wise men, and physicians (?) . . . and in the mountainous parts of this city grow rhubarb and ginger;" in which passage it appears somewhat remarkable that rhubarb and ginger should be mentioned as growing together.

As a native of Venice, *Marco Polo* directed his attention chiefly to such articles, among them rhubarb, as contributed to the commercial eminence of his birth-place. We know that the Venetian merchants managed to obtain the products of Asia, not only by way of the Red Sea and Egypt, but also that their commercial intercourse took the direction from the coasts of Syria and from the sea of Asow. By these routes it is probable that they obtained the drug, especially during the period when the sultans of Egypt obstructed their traffic over the Red Sea. Marco Polo had entered Asia from the Black Sea, as did afterwards, in the beginning of the fourteenth century, the Franciscan monk Odoricus of Pordenone or Portenau‖ in Friuly, from whose confused reports it would appear that he also has seen the rhubarb-plant in its native home.

Although rhubarb does not appear to have been a very important article of commerce during the Middle Age, still it is frequently mentioned; so for instance it appears in certain ordinances of the city of Bruges (1380) as imported from Italy. It reached Danzig from Riga in 1445; and was mentioned among the costly drugs which were to

* Pharmacographia, 442.

† After the French of *Jaubert's* translation, I. (Paris 1836), 494.

* *Beugnot*, Assises de Jérusalem, ou recueil des ouvrages de jurisprudence composés pendant le xiii siècle dans les royaumes de Jérusalem et de Chypre, ii. (1843), 173.

† Leipz. 1855, 185, Anmerk. 158.

‡ Livre de Marco Polo, etc., par *G. Panthier*. Paris 1865, I, 162-165.

§ *Ibid.*, ii., 488—491.

‖ Odoricus de Porta Naonis.

be looked for during the first circumnavigation of the Cape of Good Hope (1497); Portuguese and Italians, who reached India in the beginning of the sixteenth century, mention it as a staple article of export from Calicut and Cochin, whither it had been brought from China by way of Malacca.

We have next the statements of *Garcia de Orta*, who mentions the routes by which the drug was brought westward at his time (1536); after having reached the Gulf of Persia (Ormuz), it was brought through Mesopotamia to Aleppo, and from there to Alexandria, where it came into the hands of the Venetians. The same author also states that some was brought directly from Canton to Ormuz. The chief supply of this and other oriental products being thus carried by land, necessitated high prices, for which we have interesting data, among others, from the year 1542. According to Leber,* 1 pound cloves was worth at that time 3 livres, pepper 15 sols,† rhubarb 18 livres 15 sols, saffron 4 livres 10 sols. In Ulm, rhubarb was subject, during 1596, to a higher tax than opium.

During the seventeenth century the commercial route remained much the same.

Batavia being, like Smyrna and Constantinople, a regular place of export for rhubarb, it was quite usual to speak of Russian as well of Turkey and Dutch rhubarb. But, finally, the trade concentrated itself upon two chief points, namely Kiachta in Southern Siberia, for the best qualities of rhubarb; and Canton, the only open port of China, for the inferior sorts. The further history of the rhubarb trade will be found in full elsewhere.‡

We will yet cast a glance at the modern reports on the countries which are the home of rhubarb. The celebrated descriptions of the Jesuit missionaries in China during the last century § confirm the previous statements, and name as the home of the best quality of rhubarb the province of Se-chueu (Sui-chuan), also the mountains from Sue-cheu to Leang-cheou, and finally, Thibet, where, however, only inferior qualities were found. The most authentic and reliable accounts, however, are derived from the interesting description of F. v. Richthofen, who possesses probably a more intimate knowledge of China than any one else living.‖ Among the products of the western portion of the province of Sz'chwan (or Sui-chuan, at the upper Kiang river), he mentions rhubarb, as growing in a wild state only upon the highest mountains; the central line of its habitat is the *Bayankara-chain* (south-westward from the above-mentioned salt lake Koko-nor), which forms the divide between the tributaries of the Hwang-ho (Yellow River) and those of the Ya-lung-kiang and of the Min-kiang. From this chain the rhubarb-plant spreads over the contiguous high plateaus in the north and south, extending in the latter direction as far as the immediate neighborhood of Kwan-hien; but the better sort do not grow so far south. The principal marts for rhubarb are Sining-fu (same as in Marco Polo's time) in Kansu, and Kwan-hien in Sz'chwan. The drug which comes from the former place is known as *Shensi-rhubarb*, and fetches the highest price, although the inhabitants of Sz'chwan are convinced of the superiority of their own product. In the western part of the plain of Tching-tu-fu a species of rhubarb is grown in fields, but this is much inferior to the wild, and resembles another variety produced near Ta-ning-hien, in the border mountains between Sz'chwan, Hupe,* and Shensi.†

It is hence apparent that the rhubarb plant is distributed over an immense tract of Central China, and it is quite possible that several species furnish the commercial drug. The statement of Richthofen, that the best quality is derived from wild plants, appears very remarkable, as the contrary was formerly supposed to be the case. These opposite statements may perhaps find an explanation from a letter written, 1870, to Collin ‡ by the missionary Biet, according to which the rhubarb plant, at least in High Thibet, flourished preferably in the surroundings of alpine huts and stables, which derive their fertility from the well-manured soil, although no sort of care is bestowed upon the plants themselves.

The apostolic vicar of Thibet, Monseignor *Chauveau*, reported, in 1870, that the export of rhubarb from that country had almost ceased, and that the plant was nowhere under cultivation. Hence we may be quite sure that the chief centre of rhubarb production is the same in our days as during the Middle Age—namely, Central China. The natural central place of export is the immense commercial city of Hankow, in the province of Hupe (Chubei) at the upper Kiang, or Yan-tse-Kiang; § the yearly export from there to Shanghai, however, does not exceed 500,000 pounds, owing, probably, to a gradually diminished consumption.

From these statements we may draw the following conclusions:

1. In *Rheum officinale* we possess for the first time a plant, the root-stock of which is identical with that of the true rhubarb.

2. This species grows in *Thibet*, the north-

* Appréciation de la fortune privée au moyen âge. Paris, 1847.

† 1 livre = 20 sol or sou.

‡ Pharmacographia, 443-445.—*Flückiger*, Lehrbuch der Pharmacognosie, Berl. 1867, 217.

§ La Chine d'*Athanase Kirchere*, de la Compagnie de Jésus. Amsterdam, 1670, 147.—*J. B. du Halde*, de la Comp. de Jésus. Description géogr. hist. chronol. polit. et phys. de l'empire de la Chine et de la Tartarie Chinoise, (Amsterdam, 1735); iii., 492.

‖ Reise von Peking nach Sz'chwan (Oct., 1871 to May, 1872), in Petermann's Geograph. Mittheilungen, viii. (1873), 302.

* Province on the middle course of the Kiang; also called Chubei.

† Province to the N. of Sui-chuan, on the right bank of the Hwang-ho River, upon its meridional course.

‡ Eugène Collin, Des Rhubarbes. Thèse presentée et soutenue à l'École superieure de Pharmacie de Paris. 1871, 24.

§ See Pharmacographia, 445.

eastern portions of which may formerly also have furnished commercial rhubarb, but have ceased to do so.

3. It is yet to be decided whether *Rheum officinale* occurs also in Sui-chuan, Shensi and Kansu, whence we obtain the true rhubarb.

4. We also want further information on *Rheum palmatum*, var. *tanguticum*; formerly the officinal drug came from the large Chinese districts just mentioned, being either carried entirely by land, or reaching the sea-coast at Canton, at Ormuz, in Syria, in Asia Minor or in Southern Russia.

5. But since China has become more accessible, it follows the more natural course over Hankow, the chief commercial city of the Chinese interior, to the seaport of Shanghai.—*Arch. d. Pharm.* Jan.

Araroba or Goa-Powder.

According to Prof. Attfield, the composition of this substance (compare above page 105) is as follows:

Moisture about 1 per cent.; saccharine and bitter matters and gum, 7 per cent.; chrysophanic acid, 80 to 84 per cent.; resin, 2 per cent.; ligneous matter, 5.5 per cent.; ash, 0.5 per cent.

It therefore is the richest source known for the preparation of chrysophanic acid.—*Arch. d. Pharm.*, fr. *Pharm. Jour. & Trans.*

Crude Shellac; and a new nitrogenized Acid contained therein.

Dr. J. Hertz of Jena has published the results of his experiments and analyses of a sample of gum which was sent to him by Consul Damm in Rudolstadt, who had brought it with him from Mexico. This gum bears the appellation of *Goma de Sonora*, and is called *Arré* by the Indians, who collect it between Chihuahua and Sonora.

It has been used as a medicine by the Mexicans from immemorial times. By boiling in water a sort of tea is made of it, or by slow solution in cold water and addition of sugar, a sort of lemonade. Women and girls use it internally in amenorrhœa or palpitation, and it is said to be generally efficacious in inflammations of mucous membranes as a lenitive. J. Leon Soubeiran wrote on it as follows (*Buchn. Rep.*, 1856, 32):

"The name of *Tzinacancuitlatl* is given by the ancient Mexicans to a substance, now called Gummi de Sonora, and occurring in the province of Sonora as the product of a tree, called *Tzinacancuitlaquahuitl (Mimosa coccifera)*. It is a sort of Gummi laccæ (shellac), produced by a species of coccus, which inhabits the tree and has a red color like cochineal, although being much smaller. It occurs in pieces of various shapes and sizes, mostly cubical and very brittle, full of irregular cells, containing dried larvæ or insects. Its taste is astringent and bitter; the color is yellowish-brown or brown, not very uniform, however; it sinks in water."

Crude East India shellac does not yield anything to water; this is owing to the fact that (according to Oken) it is exhausted by boiling water, before being sent to market, and the red acid liquid thrown away. This Mexican variety, however, still contains the acid substance, which is soluble in water, with beautiful red color.

The aqueous solution of the latter was precipitated with plumbic acetate and filtered. Upon the filter remained a violet-red mass, while the filtrate was colorless and clear. The excess of lead in the latter was removed by H_2S, the solution filtered and heated to boiling to expel remainder of H_2S, and concentrated upon the water-bath. On cooling the concentrated solution, a mass of crystals was obtained, in the form of yellowish scales and of silky lustre, which were soluble in water, very little soluble in hot dilute alcohol, and entirely insoluble in absolute alcohol and ether. By repeated boiling with alcohol they were obtained entirely colorless. Analysis of the crystals led to the formula $C_3H_7NO_2$. It is a monobasic acid, and capable of yielding crystallisable salts. Its formula is isomeric with Alanin, Sarcosin, Lactamid and Urethan, and on account of its close relationship to Sarcosin, the author names it *Sarcosic Acid*.

The coloring matter is obtained by mixing the precipitate upon the filter with water, removing the lead with H_2S, filtering, heating, and evaporating to dryness. The residue is soluble in water with fine red color, insoluble in alcohol and ether, and has an acid reaction.—*Arch. d. Pharm.*, 1876, March, 234.

The Kentucky Shower of Flesh.

It appears to be a law of nature that weeds should grow with flowers, tares with corn, and that superstition should almost touch truth.

Showers of frogs, of fishes, of bloody rain and snow have frequently occurred. The last sensation, however, "the fall of flesh in Kentucky," offers some features of special interest.

In 1537, while Paracelsus was engaged in the production of his "elixir of life," he came across a very strange-looking vegetable mass, to which he gave the name of "Nostoc."

The want of rapid transportation, combined with the perishable nature of the substances fallen, have hitherto prevented a complete and exhaustive examination. The specimens of the "Kentucky shower," however, reached this city well preserved in glycerine, and it has been comparatively easy to identify the substance and to fix its status. The "Kentucky wonder" is nothing more or less than the "Nostoc" of the old alchemist. The "Nostoc" belongs to the confervæ; it consists of translucent, gelatinous bodies joined together by threadlike tubes or seedbearers. There are about fifty species of this singular plant classified; two or three kinds have even been found in a fossil state. Like other confervæ, the Nostoc propagates by self-division as well as by seeds or spores. When these spores work their way out of the

gelatinous envelope, they may be wafted by the winds here and there, and they may be carried great distances.

Wherever they may fall, and find congenial soil, viz., dampness or recent rain, they will thrive and spread very rapidly, and many cases are recorded where they have covered miles of ground in a very few hours with long strings of "Nostoc."

On account of this rapidity of growth, people almost everywhere faithfully believe the Nostoc to fall from the clouds, and ascribe to it many mysterious virtues. The plant is not confined to any special locality or to any climate; sown by the whirlwind, carried by a current of air, in need of moisture only for existence and support, it thrives everywhere. Icebergs afloat in mid-ocean have been found covered with it. In New Zealand it is found in large masses of quaking jelly, several feet in circumference, and covering miles of damp soil; and in our own country it may be found in damp woods, on meadows, and on marshy or even gravelly bottom.

All the Nostocs are composed of a semi liquid cellulose and vegetable proteine. The edible Nostoc is highly valued in China, where it forms an essential ingredient of the edible bird-nest soup. The flesh that was supposed to have fallen from the clouds in Kentucky is the flesh-colored Nostoc (*N. Carneum* of the botanist); the flavor of it approaches frog or spring chicken legs, and it is greedily devoured by almost all domestic animals.

Such supposed "showers" are not rare, and are entirely in harmony with natural laws. In the East Indies the same Nostoc is used as an application in ulcers and scrofulous disease, while every nation in the East considers it nourishing and palatable, and uses it even for food when dried by sun heat.—*Leopold Brandeis, of Brooklyn*, in *The Sanitarian*.

Eriodictyon Californicum, Benth.

This drug consists of the leafy tops of the plant, the leaves being stuck together by a resinous exudation which gives quite a varnished appearance to the upper surface of the leaves and to the stems; the under surface of the leaves, except the veins, being almost entirely free from this resinous substance. It is this curious character of the leaves which gave rise to another name for the plant, *E. glutinosum*, Benth.

The leaves, which are leathery but brittle, are elliptic, lanceolate in outline, tapering below into a short petiole, the margin of the leaves being slightly toothed. The upper surface of the leaves is smooth, and the veins are indistinct. The under surface is whitish, from the presence of minute downy hairs, and the veins are prominent, the midrib forming a stout keel. Owing to the resinous coating on the veins, the under surface of the leaf has a strongly reticulated appearance. The taste of the leaves is very similar to the odor exhaled in spring by the opening buds of the well-known balsam poplar (*Populus Tacamahaca*, Mill).

The plant yielding these leaves is an evergreen shrub, about four or five feet high, which grows abundantly in dry, rocky places, on the mountains of Northern Mexico and Southern and Central California. The leaves are alternate, three to four inches long, and from half to one inch broad in the middle. The light purplish blue flowers are arranged in scorpioid cymes, the flowers themselves bearing a distant resemblance to the common lungwort (*Pulmonaria officinalis*, L.) of our gardens. The plant belongs to the natural order Hydrophyllaceæ, a family nearly allied to the Boraginaceæ, from which it differs chiefly in the parietal placentation of the capsular fruits.

The following remarks are taken from the *Pharmacist*, Feb., 1876, p. 34:

"The plant has long been used by the Spaniards and Indians as a specific for lung diseases, from which it has obtained the name of 'consumptive's weed.' It is also known as 'yerba santa,' 'mountain balm,' and 'bear's weed,' from the partiality which bears show for its foliage."

Dr. J. H. Bundy, of California, reports that he has cured some severe cases of chronic bronchitis; that he has successfully treated pneumonia with the drug, and that he has noticed a peculiar action upon the kidneys resulting from its use. The natives are said to make an aqueous decoction as a general tonic, and a decoction with whiskey for chronic lung diseases. In acute coughs and colds it appears to be of little value.

Mr. H. S. Wellcome treated the leaves with strong alcohol for an hour, which dissolved all the surface resin and left, on evaporation, an amber-colored aromatic resin. On being afterwards exhausted with alcohol, the leaves yielded a dark green resin similar to the first in general character, but having a bitter taste. A subsequent aqueous infusion of the leaves which had been exhausted by alcohol, yielded an intensely bitter extract. He therefore recommends the drug to be used in the form of tincture, 4 ozs. of the leaves being used to a pint of alcohol of 75 per cent. Of this tincture the dose is one to two drachms. A syrup may be made by triturating the resin with powdered French chalk, and then following the process for making syrup of tolu. The syrup thus made has an agreeable odor and taste, like that of the pineapple.—*E. M. Holmes*, in *Pharm. Journ. and Trans.*, April, 1876, 781.

On Two New-Caledonian Plants.

We extract the following notice from a thesis presented to the Paris School of Pharmacy by Mr. Bavay, and published in *Répert. de Pharm.*, 1876, 175:

The *Niaouli*, *Melaleuca viridiflora* Sm.; nat. ord. Myrtaceæ, differs much from the *M. Leucodendron* or *minor*, which yields the oil of cajeput. The oil obtained from the fresh leaves of the niaouli is also of quite a different nature. Mr.

Bavay obtained 200–250 gms. of essential oil from 10 kilos of leaves. Its spec. gr. is 0.915 to 0.910; it is nearly colorless when rectified, and has a penetrating, rather agreeable odor, resembling somewhat that of cajeput. The plant is so abundant in New Caledonia, that the price of the oil could probably be put down as low as 4 or 3 francs, as Mr. Bavay thinks.

The *Cashew-nut-tree* of New Caledonia bears, according to Mr. Bavay, a great resemblance to *Semecarpus Anacardium* L. f. The nut contains in its pericarp a caustic, highly inflammable oil; and the bark, when cut, exudes a whitish milk which causes a sort of miliary eruption on the skin, followed by painful ulcerations.—From the description and the facts quoted, we are inclined to think that the tree is really S. Anacardium.—*Répert. de Pharm.*, 1876, 175.

The Antiseptic Properties of Chloral Hydrate.

The value of chloral as an antiseptic forms the subject of a paper by Dr. Wm. Craig, of Edinburgh, which was read on March 21st at the North British branch of the Pharmaceutical Society, and from which we condense the following abstract:

Experiments made during the session of 1874–75 at the University of Edinburgh, proved that bodies injected with the hydrate of chloral are preserved from decay equally well, as when the ordinary preservative fluids are used; but if exposed to the air and carelessly attended to, the tissues become very black and give off an offensive mawkish odor. Delicate nerve-plexuses can be more successfully dissected out, when the bodies are injected with this substance; and it is much cheaper than other preservative fluids.

A solution of hydrate of chloral in water forms an excellent fluid in which to preserve animal tissues. Dr. Craig exhibited a number of specimens so preserved, some of which had been kept a long time, (9 to 14 months), and were beautifully preserved. The usual strength of solution employed was five grains to the fluid ounce of water; occasionally the quantity was somewhat increased, as high as about fifteen grains. These solutions do not coagulate the albumen of the tissues; and, consequently, delicate transparent membranes are better preserved by chloral than by alcohol or carbolic acid.

The author also states that he had tried chloral extensively as an external application to wounds and abraded surfaces. He found that a lotion containing five to fifteen gr. in the ounce of water formed an excellent dressing to wounds and ulcers, in conjunction with lint and gutta-percha dressing. He also used it as an injection into the sacs of large abscesses, and found that it tended much to diminish secretion and make the parts heal. It is also an excellent lotion for inflamed eyes, and a good application to burns, especially when there is a fetid discharge. For the purpose of removing warts from the hands or fingers, a solution of 15 to 20 grains to the ounce of water, applied by means of lint and gutta-percha, was found very efficacious. When chloral is applied to an ulcer, a wound, or to the interior of an abscess sac, it causes at first some smarting; but that only lasts for a few minutes, and is soon succeeded by a most agreeable sensation, probably because it acts as a local sedative or anæsthetic. The author has also used an ointment, containing 30 to 60 grains to the ounce of lard, in eczema and other allied affections. He believes it to be one of the best applications in such diseases, and he has been told by another practitioner that it produced marked benefit as a local application during an attack of erysipelas of the head.—*Pharm. Journ. and Trans.*, April, 789.

PHARMACY.

Sodium Salicylate.

Complaints having been made in Europe of some impure samples of this salt having been put on the market, Dr. H. Hager furnishes the following tests of identity and purity:

Sodium salicylate is a white crystalline bulky powder, soluble in at least an equal weight of water, forming a clear, syrupy, faintly-yellow solution of a sweetish and afterwards biting taste. A drop of the concentrated or somewhat diluted solution mixed with a drop of hydrochloric acid produces a thick, white magma. It is only little soluble in absolute alcohol, but soluble in eight parts of alcohol of 90 per cent. The alcoholic, as well as the aqueous solution, diluted with 500 parts water, strikes the well-known violet color with ferric chloride. The dilute aqueous solution, treated with cupric sulphate, yields a grass-green liquid; 100 parts of the salt leave, on ignition, 33.3 parts of sodium carbonate.

The purity of the salt is ascertained: 1. From its solubility in water and alcohol. In the latter menstruum some white particles often remain undissolved, consisting of sodium carbonate, which is probably an unavoidable admixture. 2. It must be completely soluble in aqueous ammonia; this solution, mixed with argentic nitrate and boiled, must undergo no change. 3. The aqueous solution is indifferent, even when heated, towards alkaline copper solution, except that it changes the blue color of the latter to green. *

* Certain aromatic (benzol-) derivatives are capable of preventing the precipitation of hydrated cupric oxide by alkalies. Salicylic acid, mixed with cupric sulphate and soda solution, yields, as above, an intensely green solution, from which even a large excess of soda does not precipitate any oxide. It is found that 1 mol. salicylic acid in presence of at least 2 mol. soda prevents the precipitation of ½ mol. of cupric oxide. On adding to a certain quantity of sali-

4. It must be unaffected by sodium carbonate. 5. The aqueous solution yields, with argentic nitrate, a white precipitate, which is again dissolved after addition of alcohol and nitric acid, forming a clear, colorless solution. 6. Barium chloride should be indifferent towards it.

Phosphate Syrups; with special Reference to the Nature, Cause, and Prevention of certain Precipitates which form therein.

MR. W. L. HOWIE, F.C.S., at a meeting of the North British Branch of the Pharmaceutical Society of Great Britain (March 30, 1876), read a paper on the above subject, in which he proposed to discuss the best methods by which discoloration and the formation of troublesome precipitates might be prevented, as well as to consider of what these precipitates consist, and to what fault of formula, process, ingredient or storage their appearance may be attributed. As first subject, he took the compound syrup of the phosphates as introduced by Parrish, and which often deposits a granular or crystalline precipitate, sometimes enough to solidify the syrup. On examination, this precipitate is found to consist mostly of grape-sugar. The chief cause of this is the somewhat too large amount of cane-sugar employed, and the action of the acid or acids present upon it, especially when heated. Hydrochloric acid is frequently employed in conjunction with phosphoric, and has, perhaps, a more injurious influence than the other, as the author appears to have proved by certain experiments quoted by him. He also declares the amount of sugar prescribed in the last edition of Parrish's *Pharmacy* (32 troy ℥) to be larger than useful or safe; to insure permanence, the specific gravity of the finished syrup should not exceed 1.330. The best remedy to restore syrup in which such a precipitate has formed is to reduce the density so that the syrup shall contain water enough to retain the whole of the sugar in solution. The syrup containing the precipitate should be exposed, in close vessels, to such a temperature, carefully moderated, as will thoroughly re-dissolve the sugar; and then a solution containing four grains of ferrous phosphate and sixteen grains of tricalcic phosphate in each fluid ounce of aqueous phosphoric acid should be added in such quantity as to bring the syrup back to the former strength in active ingredients. Merely heating, even for a protracted time, will not insure permanence, as the same difficulty will be encountered again afterwards.

Another precipitate, quite different in appearance and properties from the one just mentioned, gives annoyance in syrups containing ferrous phosphate. This precipitate is small in bulk, grayish-white in color and generally amorphous. On being washed and dried this is found to be tasteless and insoluble in water, soluble in hydrochloric and sulphuric acids; caustic alkalies change it to brown, and a crystal of phosphate of soda added, with heat, slowly dissolves the brown powder, forming a solution in which yellow prussiate of potash gives a blue precipitate, when hydrochloric acid is added in excess, proving the presence of a ferric salt.

It is no doubt air or oxygen which gradually produces this change, converting the ferrous into the ferric salt, and precipitating the latter in a basic condition. On estimating the quantity of changed phosphate necessary to produce this ferric precipitate, it is found to be exceedingly small, so that to prevent it entirely, the greatest care in preparation and storing is necessary. The first source of oxygen is of course the water in which the iron and soda salts are dissolved; this water and likewise that used to wash the precipitate, should be well boiled to expel dissolved oxygen; the sulphate of iron should be pure and free from ferric oxide, the clear cystals only of the phosphate of soda selected, and the whole operation conducted as rapidly as possible, the soda being poured into the iron solution, and the resulting precipitate washed by decantation, which is easy if certain precautions are taken. When the iron and soda salts are dissolved in cold water, and mixed cold, the precipitate is at once greenish and gelatinous, and practically will not subside unless after long standing. A phosphate thus prepared must therefore be washed on a filter, and will have to be exposed to air.

If the solutions, before mixing, are brought almost to the boiling point (above 180° F.) and then mixed, a dirty white precipitate is thrown down, and when the soda has been nearly added, the whole may solidify into a stiff pasty mass, even when a considerable quantity of water has been used for solution. The mixture in a short time again becomes liquid, but the precipitate is bulky and to some extent gelatinous, and will not at once wash by subsidence.

If, however, the temperature of the solutions previous to mixing be about 130° F. and the soda very gradually poured into the iron with constant stirring, the precipitate formed will be nearly white, the true color of recent ferrous phosphate, and when the precipitation is complete, the phosphate will subside in two or three minutes, and can be thoroughly washed by decantation in little more than half an hour. It may then be thrown on a calico filter and easily deprived of the rest of the water by pressure with the hand or in a screw press, very little of it passing through the cloth, and the whole operation being conducted so rapidly, as scarcely to affect the white color of the precipitate. There should be at least one gallon of water for every pound of the iron or soda salt; it should be boiled some time to expel air; and the salt should be dissolved in it, while still nearly boiling, which will reduce the temperature to

cylic acid only 1 mol. of soda, addition of the cupric salt produces a precipitate of ordinary cupric salicylate, easily soluble in excess of the alkali.—*Weith*, in *Ber. d. d. chem. Ges.* 1876, 342.

about 130° F., on noting which, the precipitation may at once be proceeded with. In this manner it is easy to turn out a dry phosphate (B. P.) containing over 50 per cent. of ferrous salt.

A process for the preparation of phosphate syrup, which, in results, as far as freedom from ferric contamination is concerned, is superior to the old method, was put forward by Mr. H. W. Jones. *Pharm. Journ.* V. (3), pg. 541. It consists in dissolving pure metallic iron in phosphoric acid to saturation, and estimating volumetrically; then reducing to standard strength, and adding a proper proportion of phosphoric acid. The estimation in this process is, however, quite unnecessary, as the exact quantity of iron and acid may at once be put together, and if the metal be the best charcoal wire or plate, the amount of impurity is so small as to be scarcely worth reckoning. A formula for syrupus ferri phosphatis (B. P.) on this basis would be :

Iron	38 grs.
Phosphoric acid, sp. gr. 1.5	6 fl. ʒ
Water	6 fl. ʒ
Syrup	8½ fl. ℥

Mix the phosphoric acid with the water, and dissolve the iron in the mixture, plugging the mouth of the flask with cotton; then filter and add the syrup. This contains 1 grain ferrous phosphate in each fluid drachm.

The author then describes several kinds of crystalline precipitates of phosphate of iron, formed under different circumstances; being deposited in minute hexagonal as well as in rhomboidal plates.

Another troublesome precipitate is that which forms in Easton's* syrup, and consists of phosphate of quinia. It usually appears a few days after making, and may go on until the syrup is entirely solidified; and though the crystals may be dissolved by heat, yet after a time they invariably again separate, even when a quantity of phosphoric acid is added. The best method of rectifying this separation is to expose the syrup to as low a temperature as possible, to permit the crystallization to proceed to its utmost limit, then separate the precipitate on a calico filter, in which, with pressure, it can be well freed from the syrup. This pasty mass is then treated with a little water, in which it is soluble, and a small quantity of citric acid added, to prevent precipitation of a ferric salt; then the quinia is precipitated with ammonia, washed, dissolved in phosphoric acid, and added to the syrup, which meantime has been carefully, and as rapidly as possible filtered through paper. Without reprecipitation it seems almost impossible to keep the quinia in solution.

The last point touched upon by the author is the discoloration, or rather its becoming colored. In Parrish's syrup, the cochineal disguises any moderate brown tint, but in Easton's and the B. P. syrup it gives considerable annoyance. We must turn again to the atmosphere to account for this change. If the syrup be carefully prepared, and at once bottled and sealed, it would seem to keep almost colorless for a very long time; but exposure to the air is quickly followed by a brown color appearing on the surface and rapidly extending downwards through the whole bulk. The proper preventive, therefore, is to secure all syrups containing ferrous phosphate in such a way as to exclude atmospheric air. — *Pharm. Journ. and Trans.*, April 8, p. 804.

* *Syrupus Ferri Phosphatis cum Quinia et Strychnia* (Easton's).—Sulphate of iron 2½ oz. av.; Phosphate of Sodium 3 oz., Sulphate of Quinia 1½ oz. and 48 grs.; Strychnia 24 grs.; Dilute Phosphoric Acid 56 oz.; Sugar 56 oz.; Dist. Water q. s. Dissolve the Sulphate of Iron and Phosphate of Sodium in separate portions of the water, mix the solutions, collect the precipitate, wash it, dissolve it, and the Quinia (precipitated from the sulphate) and Strychnia in the phosphoric acid, mix all together, and add the Sugar to make a syrup. 1 fl. ʒ contains 1 gr. phosphate of iron, 1 gr. phosphate of quinia and 1·32 gr. of Strychnia.

Note on an Ointment containing Calomel, Hydrocyanic Acid, and Acetate of Lead.

MESSRS. T. H. POWELL and J. Bayne read a paper on the above subject before the Pharmaceutical Society of Great Britain, which we reprint from the *Pharmaceutical Journal and Transactions* of April 8th :

The reaction which we record in this paper, although met with but very rarely in the routine of dispensing, is nevertheless of considerable interest, and merits more attention than it has yet received. The ointment in question had the following composition :

℞. Hydrarg. subchloridi	ʒ i.
Plumbi Acetat	ʒ ij.
Glycerini (—æ, U. S.)	ʒ ij.
Acid. hydrocyan. dil	ʒ ij. (B. P.)
Adipis	℥ i.

M. Ft. unguentum.

When mixed, instead of being white, as had been anticipated, it was of a deep black color; and on making a few experiments it was found that, on adding the hydrocyanic acid to the calomel, a clear liquid and blackish-gray powder resulted, which powder became a deep-black on the subsequent addition of the acetate of lead. It was first necessary, therefore, to ascertain what action hydrocyanic acid had on calomel, and then what further decomposition took place when the acetate of lead was added. Among the tests for calomel in the British Pharmacopœia it is mentioned that contact with hydrocyanic acid darkens its color. No information beyond this could be found in any of the pharmaceutical text-books at hand, nor did it seem to be known that they were incompatible.

Scheele seems to have been the first to investigate this reaction, and he gives his opinion that metallic mercury results, and a liquid which contains cyanide of mercury and hydrochloric acid.

There is next a notice in the *Journal de Phar-*

macie for 1829 (Vol. 15, p. 523), by M. Regimbeau, a young pharmacist, who independently corroborates Scheele's results. A *résumé* may prove of interest. He observed, when making a linctus containing calomel and emulsion of bitter almonds, that the liquid gradually assumed a gray color, and in a short time deposited a dark powder. Suspecting this was due to the presence of prussic acid, he suspended calomel in water by means of a mucilage of tragacanth, and then added the acid, obtaining the same result as with the bitter almond emulsion. On mentioning this to the Assistant Professor of Pharmacy at Montpellier, he was told that the same thing had been observed in making some calomel biscuits, flavored with bitter almonds, and he adds that the metallic mercury appears in the form of very brilliant globules, easily discernible under a lens.

To this paper, however, is appended an editoral note by Soubeiran, which runs as follows: "The chemical phenomena that take place in this reaction are much more complicated than the author seems to think. If a single experiment I have made on this subject does not deceive me, the supernatant liquid is very acid, and contains hydrocyanic acid, hydrochloric acid, bichloride and bicyanide of mercury. As for the gray powder, its nature is still unknown to me, but it does not contain metallic mercury. Although derived from calomel, finely divided by the action of water, this powder has a very crystalline structure. Microscopically examined, a black powder is seen, and a large quantity of small shining crystals. These have been mistaken for metallic mercury. Heated, the powder seemed to give off a little gas, and a sublimate possessing the physical properties of calomel, and there remained a small quantity of a black powder which seemed to be carbon. Potash did not free ammonia, nor hydrochloric acid prussic acid.

On referring to Gmelin's hand-book we found that the difference of opinion did not cease here. One observer says, "All the calomel is not decomposed, even when an excess of prussic acid is present;" another that "the resulting liquid contains sal ammoniac, and that the black powder sublimes above 150° C., the sublimate consisting of calomel and metallic mercury, while a carbonaceous substance is left behind," and lastly in Muter's "Chemistry," metallic mercury and bichloride of mercury are said to result. The experiments the authors have made appear to throw additional light upon this subject and to clear up to some extent this conflict of opinion. When calomel is acted upon by prussic acid, there results a heavy blackish-gray precipitate spangled with crystals, if a crystalline calomel be used; a dead blackish-gray if the calomel be in a very fine powder; and a clear supernatant liquid, smelling strongly of prussic acid and giving a precipitate of mercuric iodide with the iodo-cyanide of mercury and potassium. On exposing this to the cold, till all trace of hydrocyanic acid has disappeared, there is left a liquid having an acid reaction, giving a curdy white precipitate with nitrate of silver insoluble in boiling nitric acid, and with iodide of potassium a precipitate of mercuric iodide; on gently heating, hydrocyanic acid is evolved, and when it ceases to be given off, the resulting liquid is found to contain free hydrochloric acid and bichloride of mercury. The black precipitate thrown upon a filter is washed till all trace of cyanide of mercury is removed, and then dried at the heat of a water-bath. It gradually loses its dark color until, when quite dry, it is a light gray. This dry powder yields, on heating, a sublimate consisting of metallic mercury and calomel, and probably a brick-red residue remains behind. If the calomel used be also sublimed, a slight blackening may take place, and a similar residue will probably be obtained which proves to be oxide of iron. What is it, then, if Scheele's theory be correct, which arrests the action?—for free hydrocyanic acid is always found to be present. It will be found that if the clear supernatant liquid previously spoken of be poured off upon a second portion of calomel, no reduction takes place, and we have come to the conclusion that this must be caused by the presence of the hydrochloric acid. This is shown to be the case by treating calomel with successive portions of hydrocyanic acid, and washing the black precipitate after each separate application till bicyanide of mercury ceases to be formed, when a gray powder remains which, on drying, proves to be metallic mercury. It will also be found that a mixture of three parts of dilute hydrochloric acid and seven parts of hydrocyanic acid B. P., does not darken calomel. Sulphuric and nitric acid act in the same way, but less powerfully; while glacial acetic acid must be present in the proportion of about four volumes to one volume of prussic acid B. P. to secure a like result.

This probably explains the part played in the decomposition by the acetate of lead, which abstracts the chlorine of the hydrochloric acid with the liberation of free acetic acid, thus allowing a further reduction of the calomel. We may add that white precipitate is not blackened by prussic acid but is slowly dissolved by it, the resulting liquid containing bicyanide of mercury and chloride of ammonium.

The authors think, then, that Scheele's theory is probably the true one; but with this reservation, that complete decomposition does not take place unless the hydrocyanic acid be largely in excess; and that, in any case, free hydrocyanic acid will be found to be present when decomposition ceases.

Lithium Carbonate.

THE manufacture of lithium-salts has been steadily increasing during the last few years, and has been estimated by E. Schering at between 2,000 and 3,000 kilos yearly. The carbonate, which 20 years ago cost $55 per pound, can now be had for $4.20 to $4.75. The bulk of the lithium preparations, most of which are manufactured in Germany, are consumed in England and in this

country for the treatment of gout and certain urinary diseases (uric acid diathesis); while the iodide and bromide are used in photography, and some other salts in pyrotechnics.

The process now in use for the manufacture of lithium carbonate from *lepidolite* is that of Filsinger or Schering. The previously powdered and sifted ore is placed in a trough of brickwork situated upon a warm part of the furnace, and mixed with concentrated sulphuric acid, which had been already in use, and contains small quantities of nitric acid, until it forms a thin milk; it is digested under occasional stirring until the mass has been converted into lumps, in which condition it may be easily transferred to the furnace. These lumps are heated with a moderate fire until hydrofluoric acid and the small excess of sulphuric acid are expelled; then more strongly heated, and, while still warm, lixiviated and exhausted with water in a series of vessels lined with lead. The residue consists of tolerably pure silica, which may be usefully employed for other purposes, and contains not more than 3 per ct. undecomposed ore. Former experiments having shown that lithium sulphate is incapable of taking the place of potassium sulphate in alum, enough of the latter salt (K_2SO_4), is added (after a previous analysis of the quantity of potassa and alumina) to the lye, to form alum with the aluminium sulphate already present. The solution is concentrated by boiling in large copper pans, and the alum deposit, as fast as formed, is removed. This is transferred, when cold, to a centrifugal machine to deprive it of mother-water, and recrystallized from water, when it forms an almost chemically pure potash-alum. The remainder of the alumina still in solution (amounting to about 1.5 per ct. of the original weight of the whole solution) is precipitated, under continued boiling, by means of a pure, homogeneous milk of lime; the various mother liquids, (viz., that separated from the precipitated alumina, and the drippings from the centrifugal machine) are united and precipitated as exactly as possible by solution of barium chloride. In this manner all the sulphates are converted into chlorides. The barium sulphate produced is utilized elsewhere. The resulting solution, containing the chlorides of lithium, potassium, sodium, calcium, and perhaps barium, is evaporated to dryness, the dry mass transferred to an earthen retort standing in a glycerine-bath, and provided with a condenser, and digested with absolute alcohol, which dissolves lithium and calcium chlorides. This solution is transferred to another retort, the alcohol recovered, the residue dissolved in water, the lime precipitated by ammonium oxalate, and accidental metallic impurities by just sufficient ammonium sulphydrate. The pure lithium chloride thus obtained is now concentrated in a large silver-boiler, when it will, on cooling, form magnificent fern-like crystal groups. To prepare the carbonate, the solution is precipitated with ammonium carbonate, and the precipitate washed with alcohol of 60 per ct., whereby all trace of chloride is removed. Finally, the salt is dried, sifted, and packed.—*Pharm. Centr.* No. 10, and *Arch. d. Pharm.*, March.

Researches on Eucalyptus Globulus.

The residue which is obtained by evaporating an alcoholic tincture of *Eucalyptus globulus*, and which is usually called "resin," may be split into several substances, according to P. A. Hartzer, (*Ber. d. deutsch. Chem. Ges.* March 13.) On macerating this resin in ether, and adding a solution of potassa in absolute alcohol, a red deliquescent crystalline salt is precipitated, being chiefly potassium tannate. That portion of the crude resin which is insoluble in ether, consists mainly of tannic acid. The ethereal solution of the resin, to which potassa has been added, contains, besides fatty acids, etc., an amorphous resin-acid, which may be extracted by distilling off the ether, dissolving the residue in alcohol, and adding an alcoholic solution of plumbic acetate. The fatty acids and the coloring matter are precipitated, but the resin remains in solution. The filtrate is freed from lead by sulphuric acid, and concentrated until the brown resin is deposited.

This resin forms, with sulphuric acid, a copulated acid of beautiful carmine color. Addition of ether (under proper precautions) changes this color to a handsome violet. In order to obtain this acid in the case of *Eucalyptus*, the method may be modified by adding to the alcoholic tincture of the leaves an alcoholic solution of plumbic acetate, whereby most of the fats and the tannic acid are removed. The resin remains in solution, mixed, however, with a wax-like body of feeble affinity. Instead of plumbic acetate, the corresponding cupric salt may be used. The precipitate caused by the lead salt may be decomposed with hydrochloric acid, in order to obtain the fat. This fatty acid is probably a *new* body, for both the sodium and the *potassium*-salt is soluble in ether, which is not the case with any of the known solid fatty acids. The crystalline form (fine needles) also differs from that of the others. The best method for obtaining this fatty acid is as follows: The leaves of *Eucalyptus*, which have previously been exhausted by alcohol, are extracted with ether, whereby a considerable quantity of fat is dissolved, which, on evaporating the ether, is deposited in granular masses. These latter contain two or three other bodies besides the fat. After having purified them somewhat by washing with alcohol, they are boiled with solution of potassa, whereby a portion is saponified and dissolved, while another portion remains unaltered. The solution is filtered from the undissolved residue, and acetic acid is added to the filtrate, which causes the separation of the new fatty acid. After purification and recrystallization it is obtained in fine white needles, fusing at 245° to 247°C. The unsaponified portion of the fat, after washing with alcohol, is of a yellow color. A small quantity of ether extracts a yellow, waxy substance

and leaves a grayish powder, which is very little soluble in alcohol, ether, and benzine. It may be obtained by dissolving it in large quantities of ether, and treatment with animal charcoal, as a white granular powder, entirely volatilizable by heat. This body is perhaps hydrated oxide of ceryl, but it may be a new alcohol. If the original alcoholic tincture, which on proper concentration had deposited the crude resin, is further evaporated, and water be added, another resinous body is precipitated, which is not colored red by sulphuric acid. Mr. Hartzer remarks, that the property of resins to form double (and often finely colored acids) with sulphuric acid points to a relationship between them and the *alcohols;* in fact, he thinks it very probable that they are themselves alcohols. Finally, he adds that neither alkaloids nor crystallizable glucosides could be dedected in Eucalyptus.

Possible Error in Spectroscopic Blood-Analysis.

PROF. REICHARDT, in a communication on the medico-legal detection of blood (*Arch. d. Pharm.*, 1875, No. 6), stated the fact that purpurin sulphuric acid exhibited the same absorption-spectrum as alkaline blood. Dr. Chr. Gänge, of Jena, however, while acknowledging their similarity under certain circumstances, shows them still sufficiently distinct to prevent their being mistaken for each other.

Purpurin-sulphuric acid (a compound not yet thoroughly examined) is formed transiently by warming an alcoholic solution of indigo-carmine.* Boiling destroys it. It is best prepared by adding a few drops of aqueous indigo-carmine solution to a weak potassa solution previously heated to boiling. Immediately a handsome green color makes its appearance, changing in a few minutes to a brown-red, resembling the color of alkaline blood. On pouring the liquid into a cold test-tube, the color *suddenly* changes to green (*slowly* however, by gradual cooling off), but may be restored by again heating to near boiling and waiting a few minutes; the intensity of the color however, diminishes at each repetition, and finally, an unalterable greenish-yellow color, remains. The same happens when the solution is allowed to stand at the common temperature for about twenty-four hours.

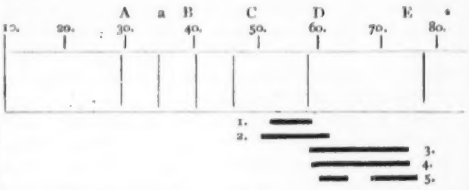
The spectrum of the still warm, red solution differs from that of an alkaline oxygenated blood, mainly in the following two points:

1. The absorption bands of the former are situated under nearly all conditions (of dilution, etc.), between the lines D and E.

The absorption-bands of the latter, however, when properly diluted, lie between D and C.

2. The spectrum of the former exists only while the solution is warm, and colored red; on cooling it entirely disappears.

The spectrum of alkaline blood, however, remains permanent, whether the solution be hot or cold.



The line 1, is the absorption band of dilute alkaline oxidized blood (hæmatin). 2. the same, when in concentrated solution. 3. is the absorption band of purpurin-sulphuric acid. (All these solutions are brown-red). 4. is the spectrum of desoxidized violet blood. 5. of oxygenated bright red blood.

There is, however, a remarkable similarity both as to situation and extent of the absorption-bands of potassium purpurin-sulphate and desoxidized blood, which latter is obtained by adding to a fresh aqueous solution of blood a trace of an alkaline sulphide, which absorbs the oxygen and changes the bright-red color to violet. Reoxidation of the blood by agitation develops the well-known double absorption band, while the spectrum of the other disappears entirely.

Detection of free Mineral Acid in Vinegar.

PROF. A. HILGER, of Erlangen, has investigated the merits of Strohl's * and Witz's † processes for detecting mineral acids in vinegar, and has come to the conclusion that Strohl's method is practically worthless. It is based upon the insolubility of calcium oxalate in acetic acid and its solubility in mineral acids. The calcium oxalate is produced in the vinegar by introducing equivalent quantities of ammonium oxalate and calcium chloride each ($\frac{1}{8}$ mol. per litre). In view, however, of the greatly differing solubility of the precipitate in hydrochloric and sulphuric acids and on account of the impossibility of observing a *partial* disappearance of the precipitate, the method deserves no confidence whatever. More valuable is the proposal of Witz, which is based on the fact that methylanilineviolet is *not altered* by acetic, but colored *greenish-blue* by hydrochloric, nitric, sulphuric, etc. acids, even when present in small quantities. Witz considers his method applicable not only for qualitative use, but also for volumetric determination of the quantities of mineral acid in vinegar by means of normal soda-solution. For if to vinegar containing sulphuric acid a measured quantity of methylanilineviolet solution be added, and afterwards standard soda-solution, the greenish-blue coloration will

* Indigo-carmine, also called blue carmine, soluble indigo-blue, precipitated indigo, cærulein or cærulein, and indigotin, is the precipitate obtained by adding soda to indigo-composition (indigo-tincture, solutio indici), which latter is obtained by acting upon one part of indigo with nine parts of concentrated, or four parts of fuming sulphuric acid. Indigo-carmine has the composition: $C_{16}H_8N_2O_2(SO_3Na)_2$.

* *Journ. de Pharm. et de Chim.* 20, 172.
† *Bull. de la Soc. ind. de Rouen*, 1874.

disappear as soon as all the sulphuric acid is saturated.

In order to thoroughly test this method, Prof. Hilger mixed samples of pure commercial vinegar with hydrochloric and sulphuric acids, in various proportions, in order to study the color of the methyl-anilineviolet (which we will designate by *m* to save space). The results were as follows:

(1) Common commercial pure vinegar of 2 to 4 per ct. acetic acid did not change the color of *m*, but strong vinegars of 9 to 14 per ct. acetic acid change the color of *m* to blue.

(2) In presence of $\frac{1}{2}$ per ct. sulphuric acid, *m* becomes blue; in presence of $\frac{1}{4}$ per ct.—bluish-green; 1 per ct.—intensely green.

(3) Vinegar containing hydrochloric acid changes the color of *m* to blue in presence of $\frac{1}{10}$ per ct. acid; green— at $\frac{1}{2}$ per ct.; colorless at 1 per ct.

The solution of *m* should contain 0·010 gm. (0.154 grs) in 100 cc. (3 fl $\frac{3}{5}$ and 185 min.) of water, and is to be employed in very small quantities, say a few drops.

Further trials showed conclusively, that in presence of very small quantities of mineral acids ($\frac{1}{10}$ to $\frac{1}{20}$ per ct.), in which case *m* did not undergo any change of color, the above-mentioned reactions may be easily brought about by concentrating the vinegar on the water-bath. Vinegar containing $\frac{1}{20}$ per ct. of sulphuric acid shows during evaporation, in presence of *m*, transitions from violet to blue, and from blue to green, according to the state of concentration. Finally there results a greenish-blue residue, which forms with water a muddy greenish-blue solution.

The same is the case with vinegar containing $\frac{1}{10}$ to $\frac{1}{20}$ per ct. of hydrochloric acid. The evaporation is best conducted by cautiously heating 25 cc. of the sample with 2 or 3 drops of *m* over the naked flame.

These results prove that Witz's method is quite reliable as a qualitative test for free mineral (especially sulphuric and hydrochloric) acids in common vinegar (not exceeding 5 per ct. of acetic acid), if the modifications of color under different circumstances be taken into account. For quantitative determinations, however, the method is much less reliable, as a number of experiments have proved.—*Arch. d. Pharm.* March, 1876, 193.

Occurrence of Bromoform in Commercial Bromine, and its Detection.

While making a titrated solution of bromine, S. Reyman noticed a peculiar odor resembling chloroform, which always made its appearance after the volumetric estimation of iodine (which had been separated from potassium iodide) by means of sodium hyposulphite. He also found that the saturated bromine-water contained much less bromine than should have been expected at the observed temperature. This raised doubts as to the purity of the bromine. On investigation the latter was found to contain as much as 10 per cent. of a foreign body, boiling somewhere between 80 and 165°, which after repeated fractionation was recognized mainly as bromoform, mixed with another substance of lower boiling point. This is no doubt the same mixture as was obtained many years ago by Herrmann (*Ann Ch. Ph.* 95, 211) in the distillation of bromine from the mother-liquor, and from which he separated the bromoform not without difficulties. Reyman's mixture yielded pure bromoform after only about 30 fractionations.

Bromine, which is so much used at present by chemists for the preparation of organic compounds, should always be examined for bromoform, which might carry a troublesome factor into certain operations. The examination may be conducted in a few minutes. An insufficient amount of bromine contained in saturated bromine-water, as well as the characteristic odor of bromoform, which betrays itself with especial intensity when bromine in substance (instead of the solution) is added to solution of potassium iodide, and the separated iodine is absorbed by sodium hyposulphite,—are sure indications of the presence of bromoform in bromine.—*Pharm. Centr.* No. 13, from *Ber. d. d. chem. Ges.*

Trichloracetic Acid.

A. Clermont has shown, some years ago, that neutral potassium trichloracetate is produced by mixing concentrated solutions of potassium permanganate and chloralhydrate in equivalent proportions. The author has now found that by doubling the quantity of the chloralhydrate, an acid salt is obtained. This may be used for the preparation of the free acid. It is only necessary to separate the precipitated brown manganic oxide by filtration through asbestos, to add to the filtrate a concentrated solution of phosphoric acid, and to distil. As soon as the thermometer has risen to 195° C, the distillate consists of pure trichloracetic acid, which crystallises at 44.8° C. It might be supposed that the facility with which salts of this acid are decomposed even at a low temperature, might be an obstacle to this manner of preparation; but it is found that in presence of phosphoric acid no such decomposition takes place. This substance is well known as an efficient caustic for warts, fungous growths, etc. but must be handled with care.—*Compt. rend.* 81, 1270.

Test-Paper for Urea.

Mr. Musculus some time ago proposed a test-paper for urea, which is to be prepared by soaking turmeric paper in "urea ferment;" such a paper, when immersed in a liquid containing urea, turns brown after a while. At the session of the French Academy, Jan. 31, he gave a description of this ferment, which he obtains by precipitation with alcohol from the highly mucous ammoniacal urine of persons suffering from catarrh of the bladder. No morphological formations can be discovered in the precipitate, whence it would appear that this peculiar ferment does not belong to the "living" ferments. Although thrown down

by alcohol and dried, it has lost nothing of its activity; it may be dissolved in water, and the solution filtered. Acetic acid precipitates it from this solution, and changes it, so as to make it inactive; all acids, even when highly dilute, destroy the ferment immediately. Heat likewise destroys it easily; even when dry, it does not bear heating over 80° C. Being a soluble ferment, it behaves like diastase, ptyalin, etc.—*Ber. d. d. chem. Ges.* 1876, 357.

Detection of Resin in Wax.

One of the best practical criteria of the purity of wax, is its specific gravity, which is between 0.960 and 0.963. Not long ago a number of wholesale and retail druggists of Berlin were defrauded by an invoice of wax which was adulterated with 20% of resin. The determination of the specific gravity may appear too tedious, and in most cases is generally neglected. Nevertheless, in the case of wax, it may be readily made by using the officinal aqua ammoniæ, which has a specific gravity of 0.960 in the German and United States Pharmacopœias. [It generally has a somewhat higher spec. gr., through loss by evaporation, but this only makes the result of an examination of wax more certain]. Pure wax floats in officinal aqua ammoniæ, but if adulterated with resin, it sinks.—*Ind.-Bl.* 1876, 35.

Emetine.

On treating ipecac in the cold with water acidulated with sulphuric acid, a solution is obtained which yields a precipitate on the addition of excess of lime. This precipitate contains the alkaloid, which may be dissolved out with ether. On evaporating the ethereal solution to dryness, treating the residue with distilled water, and the solution so obtained with ammonia, the emetine is precipitated almost colorless, and much nearer to purity than as usually prepared.

If water acidulated with hydrochloric acid is used to remove the emetine from the ethereal residue, the solution, on evaporation, yields crystals of emetine hydrochlorate, which by recrystallisation may be obtained pure, and from which perfectly pure emetine may be prepared. Emetine decomposes ammonium chloride—a property also possessed by quinine. It is believed that the decomposition of this salt by an organic alkaloid, has not hitherto been observed. Emetine and its hydrochlorate dried at 110° have a composition corresponding to the formulæ: $C_{15}H_{22}NO_2$ and $C_{15}H_{22}NO_2,HCl$.—*A. Glenard*, in *J. Chem. Soc.* 275, from *Comptes Rend.* 81,100.

Remarkable Capillary Action of Carbon Disulphide (CS_2).

If, according to Decharme, a piece of coarse filtering paper, about 10 centimetres long, and 2 or 3 cm. wide, be folded loosely together lengthwise, and placed upright in the centre of a beaker containing an inch-layer of CS_2, the latter is seen to rise in less than a minute to a height of 7 to 8 cm. At the same time, there appears upon the non-immersed portion of the paper, and especially upon the edges, a sort of white frost, apparently in the form of crystals. This frost owes its origin undoubtedly to the formation of a hydrate of CS_2 in consequence of the condensation of aqueous vapor. In a short time these hoary excrescences increase to such a degree, as to reach a length of 12–15 millimetres in about half an hour. They resemble small frost-covered branchlets or twigs, and disappear only when all CS_2 has evaporated from the beaker.—*Buch. N. Rep.* from *Jahresb. d. phys. Ver.*

Decomposition of Gunpowder.

According to Debus, the decomposition of gunpowder, when ignited, takes place in three steps, the first two of which are simultaneous, namely:

1. 34 molec. of nitre, 35 of carbon, and 1 of oxygen, produce 12 molec. of potassium carbonate, 9 of carbon monoxide, 14 of carbon dioxide and 12 of nitrogen; at the same time:

2. 16 molec. of nitre, 8 of carbon and 8 of sulphur, produce 8 molec. of potassium sulphate, 8 of carbon dioxide and 8 of nitrogen.

3. Finally, 6 molec. of potassium sulphate, (formed in previous reaction), 11 of carbon, and 1 each of sulphur and oxygen, produce 5 molec. of potassium sulphide, 1 of potassium hyposulphite, and 11 of carbon dioxide.—*Ber. d. d. chem. Ges.* 8, 1600.

Black Dye and Ink.

If a watery solution of resorcin be mixed with solution of cupric sulphate, and enough ammonia be added to redissolve the precipitate formed, a deep black liquid is obtained, which dyes wool and silk black, and may find use as black ink.

Aniline-Black by means of Vanadium.

If to the usual mixture for producing aniline black,—namely 100 gm. water, 8 gm. aniline hydrochlorate and 3.5 to 4 gm. sodium or potassium chlorate—1 centigramme (0.010 gm.) of vanadious chloride, or ammonium vanadate be added, the liquid after a few moments becomes dark-colored, and begins to deposit an abundant precipitate of aniline-black. After about 48 hours, the whole liquid has changed to a thick magma, which contains nearly the whole of the aniline-black which the original ingredients were capable of producing. The reaction is so complete, that 1 part of vanadious chloride may easily convert 1000 parts of aniline hydrochlorate into aniline-black, but in practice it is found to be more advantageous to use one part of the vanadium salt for 500 parts of the aniline salt. This discovery makes it possible to dye and print equally well with aniline-black, and no other shade can at all be compared, as to beauty and uniformity, with this variety of black.

Curious Formation of Alumina.

MR. CARL JEHU has observed that when a piece of metallic aluminium be rubbed with chamois leather impregnated with mercury, the aluminium swells up into a white excrescence of alumina, probably owing to catalytic [?] action. Mercuric iodide, chloride and oxide, and mercurous chloride produce a similar result.—*Arch. Pharm.* 5, 18.

Reaction for Sugar.

VIDAU has observed that a mixture of equal parts of hydrochloric acid and oil of benne (Ol. Sesami), either in the cold, or when slightly heated, assumes a distinct rose-color in presence of cane or grape sugar, provided not less than 0.001 gm. ($\frac{1}{64}$ gr.) of sugar is present for every cc. (16.3 min.) of mixture.—*Journ. de Ph. et d. Chim.* 22 (4), 30.

Estimation of the Value of Bone-Black.

THE direct value of bone-black for refining purposes consists in the capacity of the black for absorbing lime and removing the coloring matter common to raw sugar. The value can hardly be estimated by chemical analysis, which also has the disadvantage of requiring considerable time and no little expense. My method of determining the value of bone-black, although not wholly new, has the advantages of quickness and accuracy.

All raw sugars contain more or less lime and coloring matter, which must be removed by the bone-black. Following out this idea, I prepare my solutions as follows: No. 1. Take best granulated sugar, 195 grains; molasses (45 per cent.), 3.5 cubic inches; lime, 772 grains; boil all together in $1\frac{3}{4}$ pints of water for about 30 minutes, filter and add sufficient water to make $2\frac{5}{8}$ pints. This will be a solution of saccharate of lime containing the coloring matter from the molasses. Solution No. 2 is made by adding 0.915 cubic inches sulphuric acid to $1\frac{3}{4}$ pints of water. This will be found to very nearly neutralize the lime solution, bulk for bulk; if it does not, water or acid must be added to No. 2, until 3.05 cubic inches of it will just neutralize 3.05 inches of No. 1. To use these solutions, 154 grains of the bone-black to be tested is weighed out and powdered fine enough to pass through a 60 sieve; 1.52 inches of solution No. 1 is poured into an evaporating dish, and the black added, well stirred, thrown on to a filter, and washed with water to make 3.05 cubic inches of the filtrate. This is then slightly colored with a solution of litmus, and enough of the acid solution No. 1 is poured in from a burette to neutralize the lime remaining in the filtrate. The amount of acid solution required will indicate at once what the value of the given sample is, compared with pure bone-black.

I find that pure bone black treated in this way will require about 0.305 cubic inches of the acid solution to neutralize the remaining lime, while an old valueless black requires about 0.6 or 0.7 cubic inches. A fair commercial article will require from 0.4 to 0.5 cubic inches of the acid solution. Of course the acid only indicates the declining power of the black; the color of the filtrate from the treated black will show its power for decolorizing. Good black will make a very near coloress filtrate when treated as above. By comparison one may soon learn to select from any number of samples the one best calculated for refining purposes. It is perhaps necessary to state that the black should always be dried before operating with this test. I usually dry at 300° Fah. My results so far with this process have been extremely satisfactory.—*F. L. Bartlett*, in *Scient. Amer.*, April 22.

Quantitative Determination of acetic Acid.

AT the meeting of the New York Academy of Medicine, held on March 27, Dr. H. Endemann exhibited and described a new form of apparatus for the quantitative determination of acetic acid in crude acetate of lime. It consists of four flasks connected by glass tubes. The first flask is filled with water, the substance to be analyzed is placed in the second flask along with a sufficient quantity of phosphoric or sulphuric acid. The third and fourth flasks, which are at some distance from the second, and at a lower level, contain a known volume of a standard soda solution. A gentle heat is applied to No. 2 and drives out all the acetic acid, which distils over into No. 3 and is absorbed by the soda. The distillation is complete in fifteen minutes, and it is only necessary to triturate the soda solution with the standard acid, to ascertain how much of it was neutralized by the acetic acid, and then from this to calculate the quantity of acetic acid.

Notes on some Bismuth Compounds.

THE following abstract is taken from a paper read by Mr. M. M. Pattison Muir before the Chemical Society:

Preparation of *Bismuth Trichloride*. This is easily prepared by passing dry chlorine into a retort containing powdered bismuth; the retort is tilted upwards, and the tube which conducts the chlorine is connected with the beak of the retort. In order to avoid the introduction of moisture from the air, a tube passes through a tightly fitting cork in the tubulure of the retort into a drying cylinder containing strong sulphuric acid, from whence the excess of chlorine is conducted to the draught-chamber. First, a black fusible compound is formed, which gives place to a clear, light amber-colored liquid, yielding by gentle but protracted heat a beautifully crystallized sublimate of the trichloride. When hydrogen is passed over heated bismuth trichloride, the latter is first reduced to dichloride; but this is afterwards reconverted into the trichloride, with simultaneous production of metallic bismuth.

Bismuth Tribromide is produced by allowing bromine, in small quantities at a time, to act on

powdered bismuth contained in a retort with the beak tilted upwards. A very gentle heat causes the deposition of flat brilliant golden-yellow needles ($BiBr_3$) in the upper part of the retort. When this salt is added to water it is instantly decomposed, with production of a white insoluble powder, which is *Bismuth Oxybromide*, BiOBr.

Bismuthic Acid (so-called), $HBiO_3$, was prepared by the author, but was found, contrary to Arppe's statements, to be devoid of acid properties, and incapable of forming salts.—*Journ. Chem. Soc.* 1876, 144.

Preparation of pure Potassium Bicarbonate.

L. PESCI recommends the purification of potassa by solution in alcohol; of dissolving the potassa obtained from this solution in alcohol of 80%, passing of a stream of carbonic acid through the solution until it is saturated. The white powdery precipitate is to be collected on a filter and washed with alcohol. When prepared in this manner, the salt is entirely free from chlorides and nitrates.—*Ber. d. d. Chem. Ges.* 1876, 83.

RECENT PAPERS.

Journ. Chem. Soc. Feb.—W. N. HARTLEY. "On the presence of Liquid Carbon Dioxide in Mineral Cavities." (compare this journal, Feb., pg. 62).—J. SPILLER. "On the Occurrence of Native Calcium Chloride at Guy's Cliffe, Warwickshire." [A saline deposit, containing about 27.15 per cent. of Calcium chloride; the only instance on record of the occurrence, away from the sea, of this salt in Great Britain.]—J. H. GLADSTONE and A. TRIBE. "The Decomposition of Alcohol and its Homologues by the joint action of Aluminium and its Halogen Compounds." [Alcohol is decomposed in the presence of aluminic iodide and metallic aluminium, hydrogen being given off, and aluminic ethylate being formed; $Al_2(C_2H_5O)_6$; the action is much more energetic, if the iodine is employed in the free state, merely in solution in the alcohol. Aluminic bromide and the metal cause likewise decomposition of the alcohol, but with less energy. The chloride however is inactive.]—G. H. BECKETT and C. R. ALDER WRIGHT. "Narcotine, Cotarnine, and Hydrocotarnine." [These substances yield definite ethiodides and other ethyl compounds like most other alkaloids; and they are nitril bases.].—J. STENHOUSE and CH. E. GROVES. "Note on Incense-Resin" (see this journal, April, pg. 103).

Pharm. Jour. and Trans. March.—H. WILLIAMS JONES "Syrupus Ferri Protochloridi." [Prepared by dissolving metallic iron in hydrochloric acid, estimating the percentage of iron in a small portion of the solution, and adjusting the strength with a mixture of 1 part of orange-flower water (triple) and four parts of syrup, so that each fluid drachm contains 1 grain of the salt].—W. DYMOCK. "Chaulmogra Oil" [The oil of the seeds of *Gynocardia odorata* R. Br., nat. ord. Bixineæ. Much spurious oil in the Bombay market].—H. POCKLINGTON. "Some Practical Applications of Polarized Light."—April.—J. C. THRESH. "Liquor Ammoniæ Acetatis B. P." [8 samples yielded on analysis respectively 6.9, 7.0, 6.5, 4.6, 7.9, 5.8, 4.9, 6.5, per cent. of ammonium acetate, and nearly all the specimens were alkaline.]—E. M. HOLMES. "*Rais del Indico* (see report of analysis in April number, pg. 111).—W. WILLMOTT. "Linimentum Saponis B. P., with special reference to its employment in Hospital Pharmacy." [The formulæ of this preparation, in use in the various London Hospitals, are given as follows:

Hospitals.	*Soap.*	*Camphor.*	*Spirit.*	*Water.*	
Guy's	3 oz. soft	1 oz.	16 fl. oz.	0	(1)
Gt. Northern	2½ oz. soft	1 oz.	2 fl. oz.	16 fl. oz. boiling	(2)
London	3 oz. soft	6 drs.	3 fl. oz.	15 fl. oz.	(3)
St. Barth.	3 oz. soft	0	2 fl. oz.	15 fl. oz. boiling	(4)
Middlesex	2 oz. soft	0	0	20 fl. oz. boiling	(5)

(1) contains no water; ol. origan. 2 fl. ℥ to pint. (2) water "boiling;" camphor not in solution, contains no essential oil. (3) ol. terebinth. 4½ fl. ℥ to pint. (4) contains no camphor; ol. terebinth. 7½ fl. ℥; ol. origan. ½ fl. ℥, and aq. ammon. 5 fl. ℥ to pint "boiling" water. (5) consists of soft soap and boiling distilled water only.]—W. L. HOWIE. "Phosphate Syrups, with special Reference to the Nature, Cause, and Prevention of certain Precipitates which form therein." (See p. 138.)

Archiv. der Pharmacie, March.—A. HILGER. "Pepper and Coffee;" [Pepper yields from 4 to 5.5% of ash, never over 6%; many commercial samples of pepper contain 7 to 10% of ash, mostly owing to accidental impurities and admixtures; but samples containing 12.15 to even 21% of ash are not rare, and these are wilfully adulterated with dry clay, loam, etc. Author also reports having met with a sample of coffee, colored with Prussian blue, to impart to old yellow beans a greenish hue.]—"Beer." Twenty-three samples of *beer* yielded percentages of *alcohol* varying from 2.80 to 5.05%; *extract*, 4.27 to 9.48%; *ash*, 0.04 to 0.39].—F. FILSINGER. "Preparation of Lithium Carbonate from Lepidolite and some New Lithium-Compounds." (see page 140). [Lithium borates: $Li_2O,2B_2O_3+5H_2O$; $Li_2O,3B_2O_3+6H_2O$; $Li_2O,_4B_2O_3+10H_2O$].—E. MASING. "On the Alkaloidal Percentage of *Chelidonium maius*. [Stems, leaves and flowers of a large number of plants were mixed, 10 gm. thereof digested on the water-bath for 12 hours, with a mixture of 25 cc. of acidulated water and 75 cc. of alcohol, the alcohol evaporated, and the remainder diluted with water to 100 cc. For each analysis 25 cc. of the liquid were used, and Mayer's iodohydrargyrate of potassium solution, normal and $\frac{1}{10}$, was used for titration. The two alkaloids, chelidonin and chelerythrin (sanguinarin) were not separated, but estimated together. The alkaloids in the whole herb varied from 1.05 to 0.27, and in the root from 1.09 to 0.29.]—O. PAPE. "Contribution to the Reaction of Vegetable Poisons." [Proposing the use of starch as a diluent and protective during the examination for the alkaloids, which are often so easily destroyed in presence of strong acids.]

Buchner's Neues Rep. f. Pharm., Feb.—F. A. FLÜCKIGER. "On Garcia de Orta" (compare pg. 134). [Born at the end of the 15th or beginning of the 16th century; went to India, 1534, and acquired great fame and wealth by his medical skill.].—J. JOBST and HESSE. "On dita-bark." [The bark of *Echites scholaris* L., or *Alstonia scholaris* R.Br., native of the Philippine Islands. The authors reinvestigated the subject, partly verifying, partly correcting previous statements. Chief constituents: *Ditaïn*, discovered by Gruppe, of Manila, a problematical alkaloid, possessing febrifuge powers in high degree; *Ditamin* about 0.02%; *Echicaoutchin*, $C_{28}H_{16}O_2$; *Echicerin*, $C_{30}H_{48}O_2$; *Echiceric Acid*, $C_{30}H_{48}O_4$; *Echitin*, $C_{32}H_{52}O_2$; *Echitein*, $C_{42}H_{70}O_2$; *Echiretin*, $C_{35}H_{56}O_2$].

Pharm. Centralb.—No. 9.—LUZICH GÉZA. "On Pills containing Sodium Copaivate." [Copaiva-balsam is deprived of its ethereal oil by distillation, the residuary resin, consisting of a so-called alpha and beta-resin, is dissolved in purified petroleum, and the alpha-resin separated by repeated solution in strong alcohol. This alpha-resin is treated as a monobasic acid, and combined with soda according to the

formula $C_{20}H_{29}O_2Na$. Two parts of this are mixed with one part dextrine, aromatized with Ol. Santali, and formed into pills. Two parts of sodium copaivate correspond to 6 parts balsam.]

Ber. d. deutsch. chem. Ges.—No. 4.—H. RITTHAUSEN: "On Vicin; constituent of the seeds of *Vicia sativa* L." [A crystalline body, probably of the composition $C_{11}H_{19}N_{10}O_6$; its solution, in sulphuric or hydrochloric acid, yields with excess of baryta solution a violet-blue precipitate, becoming colorless on boiling; addition of small quantities of ferric chloride and ammonia to the solution colors it deep blue, which changes gradually to yellow; the sulphuric acid solution reduces argentic nitrate instantly, depositing metallic silver.]—C. LIEBERMANN: "On Pittakal." [Reichenbach obtained, 40 years ago, from beechwood-tar, a substance which he termed Pittacal; this substance is found to be a compound, namely a salt containing an orange coloring matter as base. Lieberman proposes to call this Eupitton.]—E. PATERNO: [Has prepared Usnic Acid from *Zeora sordida*, which contains about 9 per cent., and the composition of which is $C_{18}H_{16}O_7$; besides two crystallisable sublimable neutral substances, insoluble in water, Zeorin $C_{13}H_{22}O$, and Sordidin $C_{16}H_{18}O_7$, together to the amount of ½ per cent. *Lecanora atra* yielded a crystallisable acid, called Atric Acid, $C_{16}H_{18}O_5$.]

No. 5.—FERD. TIEMANN: "On the Compounds belonging to the Coniferyl and Vanillin-Series." [Recapitulation of the results so far obtained: The cambium-sap of pines contains a glucoside Coniferin, $C_{16}H_{22}O_8$, which by the action of emulsin takes up 1 mol. of water and splits into Cane sugar, $C_6H_{12}O_6$, and a crystalline substance, $C_{10}H_{12}O_3$, which was ascertained to have the rational formula $C_6H_3—C_3H_4,HO—OH—OCH_3$ and was named Coniferylalcohol. The latter when oxidised yields Vanillin, $C_8H_8O_3$ (an aldehyde). The corresponding members of this group (hydrocarbon-acid-alcohol-aldehyde) were searched for, and the following obtained: Vanillic Acid, $C_8H_8O_4$, Vanillylalcohol, $C_8H_{10}O_3$, Ferulic acid (see page 78), $C_{10}H_{10}O_4$. The following previously known bodies also belong to this series: Kresol, $C_8H_{10}O_2$; Eugenol (from Cloves), $C_{10}H_{12}O_2$.]

Répertoire de Pharmacie. No. 6.—A. H. "On the Preparation of Suppositories." [Recommends to rub the material in a metal mortar with a little cacao butter; then to add the rest, and when well mixed, to divide it by weighing into the proper number of parts. Finally each part is to be melted by itself in a diminutive capsule, and poured into the paper mould imbedded in slightly dampened fresh sand].—M. MUSCULUS; "On Urea-Ferment" (compare under *Ber. d. d. chem. Ges.*). —— "Pyrites and the Manufacture of Sulphuric Acid. [$\frac{3}{10}$ of all the pyrites used in France is native ore, and amounted to 178,400 tons in 1874. The percentages in sulphur and iron of some of these ores is: sulphur 46 to 53%, iron 39 to 44%.].—"Note on an almost Unknown Error in the Use of the Hydrometer." [Owing to the difference in surface-tension or capillarity of the liquid in which the hydrometer has been standardised, from that in which it may be used for determination of density, the instrument will, in certain cases, not mark the correct degree. To avoid the error, large floating tubes as well as large hydrometers should be used, the mark should be very carefully read off at the surface, and the hydrometer must float in a true perpendicular.]—BAVAY "On Two New-Caledonian Plants" (see 136).

The Smitter-Leniau-Metal is composed of copper 720, nickel 125, bismuth 10, zinc 95, tin 20, wrought iron 20 parts. The copper, iron, and nickel are first fused, the bismuth is added, and the whole cast; it is again fused, tin and zinc added and cast again. This forms a white, easily malleable and fusible alloy, resisting oxidation and very useful for ornaments.

THERAPEUTICS.

The Properties of the Coca Leaf of South America.

(*Erythroxylon Coca.*)

P. L. SIMMONDS contributes to the *Chemist and Druggist*, of April 15, an article on the Coca leaf, the most of which is worthy of reproduction.

Dr. Pigeaux, of Paris, after a trial of several months with leaves submitted to him by the Society of Acclimatisation, reports in their "Bulletin" for March, 1875 (vol. 2, second series, p. 112), that he found it less exciting to the nerves than either tea or coffee, and that from its comparative cheapness, it was far preferable to much of the second-rate tea sold. It might be made, he says, the beverage of children, infants, and brain-workers, and it ought also to be used in the army and navy, and by all hard toilers. Like all leaves dried simply by desiccation, it soon imbibes moisture, but its valuable properties might be preserved by transport in well-closed cases, or in sacks lined with tin-foil.

A decoction of the leaves has long excited attention in France as possessing a peculiar stimulating power, and favoring digestion more than any known beverage, and a tonic wine and an elixir are made from them. It seems to be admitted that the leaves, chewed in moderate doses of from four to six grains, excite the nervous system, and enable those who use them to make great muscular exertion, and to resist the effects of an unhealthy climate, imparting a sense of cheerfulness and happiness. In larger doses it is alleged that coca would occasion fever, hallucinations, and delirium. Its exciting power over the heart is twice that of coffee, and four times that of tea.

In South America the leaves are used in various ways—dry, masticated, or chewed in a bolus, sometimes in infusion, either alone or mixed with alkalies, potash or lime.

We should have to go back to tho early mythological history of Peru to discover the first traces of the use of coca, but the leaves have played, and continue to play, an important part in the habits of the natives. The Incas retained in their own hands the exclusive monopoly of the supply, and distributed the leaves as a special favor to their nobility and the foreign chiefs who voluntarily submitted to their laws.

These leaves were the appendage of the priests of the sun, constituting one of the essential bases of their religious ceremonies, and popular superstition transformed them into a symbol of the divinity.

The Spanish conquerors profited by this superstition, and maintained the culture and promoted the consumption by supplying large quantities to the administrations of mines, by which means colossal fortunes were rapidly made. In the 16th

century plantations, of which the rents ranged from 20,000 up to 200,000 francs, were by no means rare, and the tax levied became considerable.

The mines of Potosi, which alone used up 90,000 to 100,000 bales of 25 lbs. each, yielded a revenue to the Government of 100,000*l.* In some of the succeeding centuries the interior commerce in coca rather declined, owing to foreign, religious, and other causes, but about 1794 it again increased, and advanced to 600,000*l.*, and in later years even exceeded this sum.

An extended notice showing the effects of coca on the system was published by Dr. Mantegazaga, of Milan, a translation of which appeared in the *Pharmaceutical Journal* in June, 1860. He found that it had a comforting and satisfying effect on the stomach, but after a time a slight burning sensation in the mouth and pharynx and an increase of thirst were noticed. It also caused a circumscribed erythema, an eruption around the eyelids resembling pityriasis, and from time to time a not unpleasant pricking or itching was felt. An infusion of coca increased the action of the heart, and the pulse rose from 70 to 134 beats. From his experiments he drew the following conclusions:

The leaves, chewed or taken in weak infusion, have a stimulating effect on the nerves of the stomach, and thereby greatly facilitate digestion.

In a large dose, coca increases the animal heat and augments the frequency of the pulse, and consequently of respiration. A medium dose of three or four drachms excites the nervous system in such a manner that muscular exertion is made with great ease; then it produces a calming effect. Used in large doses it causes delirium, hallucination, and, finally, congestion of the brain.

All travellers who have visited Peru attribute to the use of this leaf by the Indian miners the power of sustaining hard toil. Possessing an exciting and tonic property, it enables them to withstand famine, thirst, want of sleep, severities of climate, the injurious metallic exhalations from mines, and to support excess and fatigue night and day. Hence it has been thought it might render equal service to travellers who have to pass through marshy lands and polar regions, by rendering them less sensible to miasmatic fevers and extreme cold.

All the Indians, indiscriminately, chew the coca leaf as sailors do tobacco, and when it has become slightly saturated with saliva they add what is called locally the "llipta," which is a small hardened cake composed of lime and calcined wood ashes. In some districts they only add a little quick-lime. Each Indian carries, suspended from his belt, a small calabash containing the coca leaves, from which he helps himself with a spoon or bent stick as occasion requires.

Mons. E. Colpaert, in an interesting account of the culture of coca in Peru (*Bulletin Soc. of Accl.*, Paris, 1862, p. 956), states that it appears that this leaf has the property of allaying the craving of a deficiency of food, and that a person who uses it can subsist many days without eating, and without being sensibly debilitated. Also that an Indian has made a journey of 200 or 300 leagues, executing daily his 60 miles, nourished solely by coca leaves, without his health suffering.

But while he believes and admits that coca is a strengthening substance, he is of opinion that its abuse has very injurious effects upon the intellectual faculties. Any one who has visited a mineral district there will have noticed this, for there the Indian miners use this leaf to excess. Not content with chewing it from the moment they awake to the time they go to sleep, they even indulge in it during the night, and it ultimately reduces them to a complete state of idiocy, brutalizing them as opium does the Chinese when taken in excess.

M. Colpaert says that often when passing the grand chain of the Andes he has chewed coca to combat the cold, and always with the best effect. The leaves have a bitter taste, but do not burn the tongue, as is alleged. Those who use it continually, and with "llipta," have an insupportable smell. The first time he tasted it he felt, after a few minutes, slight shiverings of fever; the blood mounted to his head and pressed forcibly on the temples. He felt this for about ten minutes, after which a complete reaction took place, and he experienced from head to foot a pleasant and agreeable heat. Arrived in the morning at his resting-place, he took coca in the shape of tea before going to sleep, only throwing away the first steeping and drinking the second water of infusion. Notwithstanding the snow and the intensity of the cold, he experienced a pleasant heat, perspiring so freely as to wet the mattress.

The Indians attribute to coca many virtues, and employ it in different forms. It is for them an indispensable and favorite sustenance, for the deprivation of every other substance is less felt by the Indian than that of his favorite coca.

Every traveller passing through the country should lay in a stock, for it is the best medium of currency, and that most appreciated among the Indians. Often in the mountains not a thing could be obtained with dollars or coin of any kind, but a handful of coca will act on the Indians like a talisman, and for it he will place his hut and all it contains at your disposal. They also use coca leaves for every external malady, whether it be a cut in the hand, to stop hemorrhage, to heal ulcers and boils, or for neuralgia and headache. In the latter case, a moistened piece of coca is applied to each temple, and whether it be superstition or reality, an immediate relief is said to be obtained. The following narration of the virtues attributed to coca by the Indians was told M. Colpaert by actual witnesses of the proceedings:

In one of his latter journeys to Vilcabamba, one of the richest mineral districts of Peru, he arrived in the town at the moment when they were carrying out of his home one of the miners who for many years had been afflicted with a dreadful malady, which defied all the efforts of medical skill to cure. His body was covered with external ulcers,

and the unfortunate had been given over as incurable, and suffering martyrdom, implored to be put to death. An old Indian, who had formerly worked under his orders, demanded permission to undertake his cure, which was granted. The patient was laid on the floor of the room, stripped, and half a dozen Indians commenced chewing coca and llipta, singing and dancing around him with strong cabalistic actions. After about a quarter of an hour, when the leaves had been sufficiently masticated and impregnated with saliva, induced by the abundant foam, they again commenced dancing around and spitting on the body of the unfortunate. This lasted for about half an hour, when each Indian placed his quid of chewed coca on the ulcers of the patient, who was then enveloped in cloths and left to repose. The same scene was renewed every two days, and at the end of the month the patient, who was named Gonzales, was thoroughly cured. This treatment took place in 1850, and he was living eleven years after, when M. Colpaert wrote his narrative.

Poppig, Waddell, Von Martins, and others have pronounced favorably on chewing of coca, but Von Tschudi and Dr. Schurzer (who accompanied the Austrian Novara Expedition), give the most remarkable accounts of its stimulating effects.

The former informs us that, during his stay in Peru, he employed an Indian in some very fatiguing digging for five days and five nights, and that this man did not partake of any food during the whole time, and rested even only two hours in the night; but he constantly chewed coca leaves, consuming an ounce every two or three hours. After the work was done, the same individual accompanied Von Tschudi during a ride of 63 English miles over elevated plains, keeping pace with his mule, and taking only a short rest for his coca chewing. After all these hardships he was quite willing to go through them again without eating anything, provided he had plenty of coca supplied him. A similar case is reported by Dr. Schurzer, where an Indian accomplished a journey of 243 English miles in four days. After resting for one day, he set out for his return, on which he was obliged to pass a mountain of 13,000 feet in height. He actually returned on the fifth day, and during the whole journey there and back, he had only taken a little roasted maize and plenty of coca.

Those who once take to coca chewing can scarcely abstain from it, and in this respect coca shows even a greater power on human habit than tobacco does.

From the general observations made, a moderate use of coca does not appear to be injurious to health, and Von Tschudi even feels inclined to think the contrary, basing his opinion on the fact that many Indians attain a very great age without losing any of their mental faculties.

Dr. Pickering, in his "United States Exploring Expedition," states that he found "coca formed the resource and consolation of the miners of Alpamarca, and its use in preference to tobacco had extended to European residents. I was here first struck with the superior powers of endurance of the aboriginal American, an important item, as it has appeared to me, in the profitable working of the South American mines.

"Whilst ascending on foot to the mines of Alpamarca, we remarked the frequent necessity of resting for the sake of taking breath. The cause did not seem difficult of explanation, for at the elevation of 15,000 feet the atmosphere had lost one half of its density, so that we were obliged to double the number of our inspirations to procure our accustomed supply of air. The English superintendent stated that "a residence of years does not relieve this shortness of breath and inability of long-continued muscular exertion, and that the aboriginals born on the spot suffer equally with strangers."

The coca plant is described by Castelnau as a bush which rarely attains six feet in height, and does not often exceed three: its foliage is of a bright green, its flower white, and its fruit small and red. When the plants are about eighteen inches high they are transplanted from the seed beds into fields called cocales. The mature leaves are gathered with the fingers; they are dried by spreading them in the sun, sometimes on woollen cloths. This operation requires great care, for the plant must be protected from all dampness, which changes its color and thus diminishes its value. It is then packed in bags, weighing from 50 to 150 lbs., which are afterwards transported to great distances. The large heaps of the freshly-dried leaves, particularly while the warm rays of the sun are upon them, diffuse a very strong smell, resembling that of hay, in which there is a quantity of milfoil. It is doubtful whether the fruit, which is in the form of a small cherry, would bear transport across rigorous and variable climates.

Dr. Poppig reckoned the profits of a coca farm to be 45 per cent. The annual produce of coca in South America is reckoned at 30,000,000 lbs.

This plant is indigenous to the valleys of Bolivia, and is cultivated with much care for its leaf, which is collected three times a year. It requires a warm and humid climate, where the temperature is never below 10° Reaumur. It resists great heat, but will not survive the slightest frost. The shrub, which attains a height of 2 feet to 4½ feet, has a thick and handsome foliage.

The smell of the leaf is agreeable and aromatic, and when chewed it gives out a grateful fragrance. The properties are to enable a greater amount of fatigue to be borne with less nourishment and to prevent the occurrence of difficulty of respiration in ascending mountain sides. This would be a great boon in India, and even in parts of Europe. Mr. C.R. Markham, in his "Travels in Peru," says: "I chewed coca, not constantly, but very frequently, and besides the agreeable soothing feeling it produced, I found I could endure long abstinence from food with less inconvenience than I should

otherwise have felt, and it enabled me to ascend precipitous mountain sides with a feeling of lightness and elasticity, and without losing breath."

In Peru coca is almost confined to the Urubamba Province, and is not exported from the coast, as it is consumed in Cuzco, Puno, and Arequipa. It is considered inferior to the coca of the Yungas, Bolivia, which is most esteemed by the Indians. The annual production of the leaf of this plant in Bolivia, is estimated at 600,000 arrobas of 25 lbs. It grows in abundance on the surface of the Yungas of the Department of La Paz. The Indians, of whom there are about a quarter of a million in the State, chew it continually, as it has the reputation of staying hunger, allaying thirst, and doing away with the necessity of sleep.

Thymol as an Antiseptic.

By Lewin, thymol is rated as superior to carbolic and salicylic acids as an antiferment and antiseptic. It may be used either externally or internally, the dose in the latter case being from 0.0081 to 0.0162 gramme, three or four times daily, in a table-spoonful of water, or in emulsion of sweet almonds. For external use, a solution of 1 to 1,000 is suitable for ordinary purposes, but if a stronger one be required, 2 to 4 parts of thymol should be dissolved in 100 to 200 parts of alcohol, and diluted to 1000 parts with water. It is only soluble in water to the extent of 1 in 1,000.—*Glasgow Med. Jour.* from *Virchow's Archiv.*

Arrest of Convulsions by the Sinistro-Lateral Posture.

In *The Practitioner* of April, Dr. Fred. James Brown reports that he has seen two cases of convulsions arrested almost instantly by turning the patient over upon the left side. He says: "I adopted this procedure from experience of the good effects of this posture, both during chloroform inhalation, and subsequently in the stage of recovery from the anæsthetic. The profession owes a debt of gratitude to Mr. Bader, for first pointing out the advantages of this posture when danger threatens a patient under chloroform inhalation.

"A few months since, a man suffering from Bright's disease was seized with uræmic convulsions in my presence. I turned him upon his left side and the convulsions ceased instantly.

"Recently a man, aged 56 years, in impaired health from chronic catarrh, was seized with unilateral (right) convulsions. His consciousness and power of speech were intact. He had been convulsed for ten minutes when I entered the house, and he was growing worse. I turned him over upon his left side, and the convulsions ceased in about ten or fifteen seconds. He had experienced a similar seizure on Dec. 9, 1875.

"I hasten to report these cases, for I am certain that marvelous results will be obtained in convulsive diseases [possibly even in epilepsy] by sinistro-lateral posture. I conjecture that this form of posture acts beneficially by favoring the action of the heart, but I leave this question to physiologists."

Action of Conicine on the Cutaneous Sensibility.

At the meeting of the Société de Thérap, on Jan. 13 (reported in the *Bulletin Gén. de Thérap.*) M. Gubler stated first the facts which show that hemlock modifies the sensibility, and indicates in particular the phenomena of the death of Socrates, and the observation of Hunter of a man who, having taken a large dose of the drug, lost the ability to feel with his fingers. He related, also, a case of his own observation in which a lady suffered loss of sensibility in the fingers following their use in rubbing an ointment containing conia upon a cancerous tumor of her husband.—*Chicago Journ. of Nervous and Mental Diseases.*

Laudanin.

This alkaloid of opium, also known as porphyroxin, has been investigated by Dr. Folck, of Marburg, and the results given in the *Deutsche Klinik.* The following summary of its tonic action is contained in his concluding paragraphs.

As regards a theory of laudanin poisoning there can be no difficulty. The alkaloid, introduced into the cellular tissue, is absorbed, enters the blood, is carried through the body, and thus comes in contact with the nerves. On the cardiac nerves it acts more slowly than on the other parts, and the activity of the heart is affected much later than the nervous system generally. The alkaloid acts first and most noticeably on the centre of respiration, causing accelerated breathing, respiratory agitation, cessation, inhibition, and paralysis. The poison also acts on the vaso-motor centre, causing vascular cramp and diminution of the blood supply and, after its paralytic action is developed, dilatation of the vessels, increase of the blood supply, and heightened temperature. The most important effect, however, is the production of tetaniform convulsions. These are not difficult of explanation—they undoubtedly are connected with the respiratory agitation. Animals under the influence of large doses of laudanin, die from the brain outwards—the heart losing its vitality last of all. Taking all the symptoms, it acts very similar to brucine and strychnine; and, like them, is to be considered as a tetanizing agent.—*Chicago Journ. of Nerv. and Mental Diseases.*

Theory of the Action of Compressed Air.

Dr. Schnitzer observes that the inspiration of compressed air and its expiration into a rarefied air increase the force of the heart's impulse, and consequently that the blood is driven into the arteries with increased pressure; on the other hand, the reflux of the venous blood towards the right side of the heart is slightly obstructed. Thus the general effect of the use of compressed air, as above described, would be an increased

amount of blood in the larger circulation, and its diminution in the lesser or pulmonary circulation. The inspiration of rarefied air causes a contrary effect; a diminution of blood in the larger or systemic circulation, and its increase in the lesser or pulmonary circulation. These results are modified, however, by the larger amount of oxygen absorbed by the inspiration of compressed air, and again by the larger product of carbonic acid produced by the expiration in a rarefied air. Another element still further complicates the result; the effect of pressure exercised upon the capillary circulation.

The therapeutical applications of the inhalation of compressed air are summarized by Dr. Schnitzer; the respiratory force may be increased, the pulmonary capacity may be enlarged and its ventilation promoted. The therapeutical indications are applicable to the following pathological conditions: (1) General feebleness of the respiratory organs; (2) chronic bronchial catarrh; (3) pulmonary catarrh and the first stage of phthisis; (4) emphysema; (5) nervous asthma, in which there is no organic lesion of the heart or lungs.—*Boston Medical and Surgical Journal*, March 23, 1876.

Jaborandi in Belladonna-Poisoning.

Two cases of belladonna-poisoning in University Hospital, London, afforded Dr. Sydney Ringer an opportunity of testing the asserted antagonism of pilocarpine, the alkaloid of jaborandi, and atropia. One grain and a third of the pilocarpine were injected hypodermically within two hours and forty-five minutes, yet without any apparent effect on the symptoms. For a few seconds after the third injection it was thought that the skin became a little moister. However, the perspiration ceased almost immediately. In almost every instance one-third of a grain of pilocarpine usually induces in ten minutes to a quarter of an hour free perspiration and salivation, lasting often several hours. Four times that quantity was used without effect, affording a good example of the antagonism between atropia and pilocarpine. In order to test the specimen of pilocarpine, one-third of a grain was injected under the skin of another patient, and in a quarter of an hour he was bathed in perspiration, and his mouth filled with saliva. Having tested the activity of the drug, and wishing to save the patient the annoyance arising from the salivation and perspiration, one-hundredth part of a grain of atropia was injected under the skin, and in five minutes the perspiration and salivation had almost ceased. To learn if the poisoned patient was less subject to pilocarpine than other persons, after his recovery one-third of a grain of pilocarpine was injected, and in twenty minutes his skin was drenched with perspiration. Although these two drugs are in so many ways antagonistic, in this instance any benefit arising from the pilocarpine could not be detected.—*Medical Times.*

Specific against Hydrophobia.

Dr. Grzyvala of Krivoe Ozero, Podolia, for whose trustworthiness Professor Gubler of Paris vouches, declares that, after a series of crucial trials which he describes at length, he has found that, after having had opportunities of treating at least one hundred cases of men bitten by rabid dogs, with the *Xanthium Spinosum*, he has never in any one of these cases failed to ward off hydrophobia. He gives some startling examples. During the Crimean war, a family of twelve persons had been bitten by a hydrophobic wolf. Six of them entered his wards in the hospital of Olschanka, government of Podolia, district of Balta. They were treated with infusion of the leaves of xanthium, and all recovered. The six others, who were treated by the actual cautery and the daily use of genesta tinctoria and other drugs, died with hydrophobia in the course of twelve to sixty days. He recounts many other facts not less striking. For an adult, the dose is sixty centigrammes of the dry powder, repeated three times a day, and continued during six weeks. Children under twelve take half that quantity. The dose for animals is much larger. A herd of thirty oxen had been bitten by a mad wolf; eight had succumbed with symptoms of hydrophobia. The Commissary of Police came to Dr. Grzyvala for his "antirabic powder." He gave three ounces of the powder, with bran, daily to each of the remaining animals; none of them suffered from the disease. These are examples of which Dr. Grzyvala says he has a hundred others.—*Br. Med. Jour.*

Effects of Jaborandi on the Eye.

J. Tweedy (*Lancet*, January 30, 1875,) finds that the application of the extract of jaborandi to the conjunctiva produces narrowing of the pupil, defects of accommodation, and depression of visual powers, the last being apparently due to a diminution of the sensibility of the retina. None of these symptoms are of long duration; the defective accommodation begins in a quarter of an hour, reaches its maximum in forty minutes, and vanishes within an hour and a half.

Action of Chloral on the Rectum.

It would appear that chloral is one of those agents which act with nearly as much energy when introduced in the rectum as when taken in the stomach. In a case of puerperal convulsions to which we had been called in consultation, a solution of bromide of potassium with hydrate of chloral, which could not be swallowed by the patient, was injected in the rectum, with the effect of allaying spasm promptly and decidedly. It was repeated in the same case with excellent results. Since that time, other trials of chloral as an enema have confirmed its value in this mode of administration. The quantity of thirty grains in two or three ounces of water will generally be sufficient

for a single injection. A late No. of the *Gazette Hebdomadaire* reports a case of obstinate chorea cured in fifteen days by the injection of sixty grains morning and evening.

Since writing the foregoing paragraph we have had a curious illustration of the quickness with which chloral is absorbed by the lining membrane of the rectum. A lady who suffered severe uterine neuralgia, and to whom the taste of chloral hydrate was extremely unpleasant and provocative of vomiting, had a solution containing twenty grains of the medicine thrown into the rectum. Within two minutes she perceived the taste of it in her mouth, and was seized with severe vomiting.—*Pacif. Med. & Surg. Jour.*

Bromide of Lithium.

M. ROUBAUD draws the following conclusions from his investigations of this drug: Bromide of Lithium, as a medicine, has a double effect. It possesses, in a high degree, those lithotriptic properties attributed to the salts of lithia, and, in addition, like other bromides, affects reflex sensibility most energetically. It has not, however, the inconvenient action on the heart displayed by bromide of potassium. Consequently, its place in therapeutics is in the first rank among lithiasics and among sedatives, and its action is particularly valuable in the uric acid diathesis, which is accompanied by painful symptoms, and in neuroses, which are so often complicated by the presence of uric acid.—*Bull. Gén. de Thérap.*

Salicylic Acid in Obstetrical Practice.

DR. FEHLING *(Arch. f. Gynæcol.)* sprinkles a mixture of one part salicylic acid and five parts of starch over all puerperal ulcers of the external genitals, and claims that the wounds are cleaner and heal more rapidly than by any other method of treatment. As soon as fever or any fetid discharge appears, vaginal injections of a solution of the acid (1.600–1000) are employed. He proved that it was absorbed into the system by both these methods of application by finding traces of it in the urine.—*Centralblatt f. d. med. Wissenschaften*, March 4, '76.

Oil of Sandal Wood in the Treatment of Gonorrhœa.

"I AM fully persuaded that the oil of sandal-wood possesses a much greater power in restoring to a healthy state the mucous membrane of the urethra than does either cubebs or copaiba. In no case have I ever known it to produce sickness.

"There are objections, I admit, to the use of the oil of sandal-wood, on account of the persistent and disagreeable sensation it leaves in the throat, the irritating action it has on the stomach, and the difficulty of obtaining the pure oil, much of it being adulterated and of inferior quality. The first difficulty is overcome when it is given in the form of a capsule; the second, when it is mixed with a tenth part of the common oil of cinnamon; and the third is to be met by selecting a brand of established purity."—*S. B. Mirkle*, in *The Medical Times.*

A Large Dose of Ammonia.

"SOME time ago, while attending a woman to whom I had occasion to give brandy and ammonia, I one evening left a four-ounce bottle of aromatic spirits of ammonia standing upon a shelf in the house. The next morning, to my utter surprise, I found the bottle empty, and upon inquiry learned that the husband had drunk the contents, at once, during the night, evidently under the impression that it contained brandy.

"He had vomited once very slightly, and complained only of a moderate amount of burning in the fauces and epigastrium. I gave him an emetic of ipecac, mixed plentifully with vinegar, and followed its operation by a dose of castor oil similarly flavored.

"The man suffered no inconvenience beyond a few days' gastric irritation and diminished appetite, although he had swallowed four ounces—less about a drachm—of undiluted aromatic spirits of ammonia."—*Asst. Surg. J. Brooke*, in *Medical Times.*

Grapes in Fever.

DR. HARTSEN, of Cannes (*Centralblatt für die Med. Wissenschaften*, No. 2, 1876) recommends grapes as a valuable diet in fever.

The grapes contain a considerable amount of hydro-carbonaceous matter, together with a certain quantity of potassium salts, a combination which does not irritate, but, on the contrary, soothes the stomach, and consequently is used with advantage, even in dyspepsia. While considering the carbo-hydrates contained in the grape, we must not neglect the organic acids, particularly tartaric acid. Dr. H. thinks the nourishing influence of these acids too much neglected. It is indeed known that they are changed to carbonic acid in the blood, and are excreted as carbonates in the urine. Possibly careful research might show that, under some circumstances, the organic acids are changed to fats. Dr. H. believes that the organic acids should be ranked with the carbo-hydrates as foods. When fresh grapes are not to be had, raisins or diluted wine might be used.—*Medical Times.*

Treatment of Diabetes Mellitus with Glycerine.

DR. JULIUS JACOBS (*Virchow's Archiv*, v. 65, p. 481) alludes to the futility of all previously lauded means of treatment in this affection, and gives notes of two cases treated by Shultz's method. Shultz maintained that diabetics lose, by excessive excretion of sugar, enormous quantities of respiratory material, and are obliged to give up their fat and protein for this purpose. If glycerin, which is not changed into sugar in the organism, but is transformed directly into carbonic acid and

water, be administered, this waste is compensated, or rather vicariously prevented, by the glycerin. Jacobs made use of the following formula:

℞ Glycerinæ..... ʒ vi.
Pulv. acid tartaric..... ℈iv.
Aq. destillat.. ..... f ʒ xss.
M.

To be taken in twenty-four hours.

Although Jacobs did not obtain very brilliant results from this treatment, yet the patient's improvement was sufficient to encourage further use of the remedy. The usual food was taken.—*Ibid.*

THE INTERNATIONAL EXHIBITION.

We have yet to learn of an exhibition at which everybody was ready by the day appointed for the opening, and the present one is far from being the exception. In the case of the Russian and Austrian departments, whose goods were shipped on the "Goethe," and therefore delayed, the wide gaps on their floors in the Main Building are very conspicuous. The drug, chemical and color manufacturers, however, were generally as ready for the opening at the time of our visit (on the 8th and 9th inst.) as any class of exhibitors. Many of their cases had been filled and covered with muslin to protect them, and the coating of dust showed that they had been standing so for several days.

As might be expected, the amount of display generally increased in proportion as the exhibitors lived near to Philadelphia, and the same might be said of the number of exhibitors, especially in the way of tooth-washes, fancy soaps, Cologne-water, and cosmetics generally. The goods which specially interest us are to be found in the Main Building, and are given prominent positions in the departments assigned to the several nations. For example, the sections of Germany, Great Britain, France, and the United States lie in juxtaposition to each other, and at this point the drugs, chemicals, paints, oils and perfumes are located, so that the visitor who is interested in these wares is more fortunately situated than any other class, and has only to cross an aisle to go from the exhibits of one country to those of another.

Our stay was too short, and the confusion attendant upon the efforts to be ready for the opening on the 10th too great, to permit of any critical notice of the articles exhibited; nor would it be just to make any until the building is opened for inspection; but we have thought that it might interest our readers to know who are to exhibit goods, and what, in a general way, the nature of their wares will be.

To commence first with some of the more remote countries: From *Singapore*, Behn, Meyer & Co. send spices, gums, &c., some fine samples of mace, tapioca, nutmegs, cubebs, sticklack, gamboge, white pepper, and vegetable tallow being noticeable. *Cape of Good Hope* contributes a large assortment of wines. *Queensland* has a large general exhibit, and was entirely ready several days since. We noticed a variety of woods, vegetable fibres, minerals, &c., and some crude drugs. *Trinidad* sends seeds, cocoa-nuts, starch made from cassada, native farina, and samples of Trinidad gutta-percha. *New South Wales* occupies a large space, and is also quite ready. Matthew A. Mun sends maizena; R. Siccombe, a quantity of condensed milk; and the general exhibit contains sugars of all grades, minerals, wines, preserved meats and fruits, also kerosene and kerosene shales. This collection also embraces beautiful polished slabs of the woods of the country. One reason why these and the India collection are so complete and on time, is that most of the materials were at the last Exhibition in London, and have since been preserved in British museums, so that they needed only to be transferred and rearranged; all the trouble and delay of collection and classification being avoided. The *East India* collection is full of interest; one side of the space is inclosed with a double row of horizontal cases, filled with seeds, grains, leaves, roots, flowers, buds, berries, gums, resins, etc., with the English, vulgar, and botanical names affixed. This is by far the most complete exhibit of this sort in the Main Building, and is made up largely from the India Museum, London. Mr. Richard Daintree, late Agent General for Queensland, is, we understand, to be credited with the excellence of the display made by some of these remote countries.

Peru is far from being ready, but shows already some handsome drugs and a very large collection of wines. *Colombia* has also a collection of wines, and *Chili*, which, as a South American state, rivals Brazil in the amount of its display, is particularly strong in its minerals. Some of its silver ores are very beautiful. Its drugs are not yet unpacked.

Mexico, whose commissioners are scientific men, is going to make a very creditable display. The Mexican Society of Natural History has sent over a hundred samples of plants, flowers, roots, leaves, etc., properly marked and classified. Fine specimens of naturalized cinchona are already exhibited, and there is to be a number of crude chemical products, especially soda-salts, from the lake of Texcoco, near the City of Mexico. Lower California furnishes some botanical specimens, among which a number of handsome lichens were shown; also gums, resins, and oils. José Bernardo Silvera, of Papantla, and Zoldo, Brothers & Co., of Vera Cruz, show a fine lot of vanilla beans. This collection also contains samples of coal of different varieties, some containing a large proportion of bitumen, and beautiful minerals, especially onyx.

The Netherlands occupy a very large space, and have one of the finest collections of the exhibition. In the department devoted to their colonies, they make a beautiful display of cinchona barks, wood, leaves, flowers and seeds, with photographs of the Java cinchona plantations at Reong Goenoeng, in the Tiloe mountains; of *C. succirubra* three years old, at the Lembang plantation, on the Tangkœban Praoe; the Tjinjircan plantations in the Malwar mountains; a plantation seven years old of *C. calisaya;* an eleven-year old tree of *C. succir.;* of propagating houses and methods of cultivation, etc. There are also large jars filled with quinia-sulphate, pure cinchona, and the mixed alkaloids made in Amsterdam from Javanese barks, and an assortment of gums, resins, fruits, flowers, wax, indigo, etc, which are very interesting. An herbarium, from Breitenzorg, consisting of dried and mounted plants, is also a feature of the colonial exhibit.

In the exhibition of the Netherlands proper, P. W. Van Calker shows glues and glue stock; Van der Elst & Matthies, of Amsterdam, a glass pyramid of ammonium sulphate; the Garauchine works, of Tiel, a stand of samples; the Arnheim Cologne works, a large assortment of their wares; Sanders & Co., of Leyden, soaps; C. A. Vriesendorp & Toner, of Dernacht, varnishes; G. Y. Gerter, of Sneek, paint-oils, indigo, potash, etc. Henny & Co., of Deventer, glue; D. & M. Grootes Brothers, Westzaan, blueing; Wilhelms, soaps; Leur, of Haarlem, dry paints. A collection of colored models is shown illustrating the pathology of the rinderpest. Dr. A. Mathijsn, of North Brabant, to whom we are indebted for the plaster-of-Paris dressing, sends a collection of models.

Brazil bids fair to make a fine display, if their goods are in proportion to the style of their cases; but as yet little can be judged of its extent, excepting from the space occupied.

Norway has a very handsome collection of goods, chief among which is Peter Moller's cod-liver-oil. H. N. Ditten, of Christiania, exhibits some well-made tourist's medicine chests, and his aperient tonic pills, which have the en-

dorsement of the late Dr. Boeck and other well-known men. C. Jordan also sends cod-liver oil. Daniel Sten contributes soaps and toilet articles, and perfumes whose odors are apparent outside the case. The Holmens Technical Works send inks and samples of their aseptin. Safety matches are a specialty of Norwegian manufacture, and are represented by Jöhtsen's and the Nitedal wares.

Denmark exhibits the following articles, but has not yet finished unpacking: Meyer & Henckel, of Copenhagen, fluid color for butter, and aniline varnishes; Chr. Hansen, cheese-rennet extract; P. Heering has a collection of his bottles of cherry-cordial arranged to represent a mammoth palm tree; L. P. Holmblad shows stearine candles.

In the *Italian* exhibit, very little is as yet ready. Vincenzo Bassaloni, of Milan, shows a collection of dry colors for paints. A large brick of sulphur, badly broken, owing to faulty packing, was the only evidence we could see of this important feature of Italian commerce.

Spain has enclosed her collection with a high wall of show cases, in which there is promise of a rich exhibit of drugs, oils and wines peculiar to the country, but they had not been sufficiently classified to admit of a notice.

The Austrian exhibit is sadly behind-hand, owing to the cause before referred to, but some manufacturers who were early in getting to work are already on the ground, at the rear of the space allotted. Sarg, of Vienna, who made such a handsome show of his wares at the Vienna exhibition, rivals our Philadelphia men even in the extent of his display. His enormous tablet of blocks of stearine, enclosed with a border of black, brown, and yellow wax, and flanked with pyramids of candles, is one of the most prominent features of the Austrian collection. A show-case at its base is filled with glycerine and other products of this well-known firm. Calderara & Bankmann, of Vienna, have soaps; Gustav Wagenmann has a pyramid of wax in tapers, candles, etc.; C. Francke, of Prag, a case of pharmaceutical products and fine drugs; Ernst Riha, of Pilsen, show samples of their water-colors; Prisbram & Co., of the Austrian Alazarin Manufacturing Co., at Vienna and Kœnigsburg, are exhibitors, and the following additional firms are on the ground and nearly ready with their wares, viz.: Franz Batka, of Prag, T. Prochaska, of Prag, and J. Demartin, also of Prag.

Lenoir & Forster, of Magdelenen-Strasse, Vienna, have a very large and elaborate collection of chemical, pharmaceutical, meteorological and physical apparatus and implements, together with numerous pure reagents and preparations.

Germany.—The drug and chemical trade of this country is more thoroughly represented than any other industry which was ready at the time of our visit to the main building. Each one of the numerous exhibitors had something worthy of special note, but we can do but little more at present than give an idea of the names of exhibitors and the general nature of their goods, reserving for our next issue a more critical notice. F. A. Wolff & Son, of Heilbronn, pharmaceutical apparatus; Lipowsky, of Heidelberg, hospital and ambulance appliances; A. W. Faber, of Nurenberg, plumbago wares and artists' materials; Stantien & Becker, of Berlin, amber; Friedrich Bayer & Co., aniline and alizarin compounds; Leuder and Seidloff, of Dresden, and Hirsch & Merzenich, of same place, dye and paint colors; Arthur Gysæ, paint colors; Anton Sauberlich, of Zwickau, perfumery and other toilet articles; Jean Marie Farina, of Cologne, has a pyramid of what are probably genuine waters; Gundlach Brothers, or Widow Gundlach & Sons, of Hesse Nassau, crucibles, etc., of plumbago and fire-clay; Heinrich Hænsel, of Pirna-on-the-Elba, essences, extracts, and waters; Gœdeke & Co., essential oils; Gustav Lohse, of Berlin, perfumery; B. Langwisch, toilet articles; Chemische Fabric auf Actien, formerly E. Schering, of Berlin, a variety of fine novelties in chemistry; Dr. Wilhelm Haarman, preparations of vanilla; C. A. F. Kohlbaum, Berlin, rare alkaloids and their salts; Friedr. Jobst, Stuttgart, quinia and morphia salts (some of the latter are made from samples of opium raised in Germany, yielding 12 per cent. of morphia); Forster Gruenesberg, soda potash, and ammonia preparations for manure, gunpowder, alum, and soap-makers; Th. Wuertz, near Berlin, Chemical Color Works, corallin, purpurin, crystalized picric acid, etc.; Dr. F. Wilhelm Rendnitz, artificial oil of bitter almonds, oil of Niobé, artificial benzoic acid, chloride of benzol, etc.; Dr. B. Huebner, of Rehmsdorf; H. Trommsdorf, of Erfurt, handsome collection of alkaloids, metals, crystaline acids, and fused alkalies; Brohme & Co., Bergen-on-the-Donau; Thueringische Actien Ges., peat; Joh. Chr. Blœdner & Son, soaps and toilet articles; Kronheim & Co., of Berlin, glues and chemicals; W. Suhr, Altona, glue; Lœflund, of Stuttgart, extract of malt; J. F. Heyl & Co., Berlin, samples of xanthate and sulphocarbolate of potash, and oils; Fischer & Schmitt, of Berlin, gelatine; Puffer & Co., of Breslau, pure zinc and zinc colors; Dr. Theodor Schushart, chemicals; Dr. F. Von Heyden, salicylic acid preparations; Bartels & Kogemann, glue, etc.; Dr. L. C. Marquart, acids and various salts; Saame & Co., zinc and potassium salts, chloral hydrate, chloroform, pure acids, etc.; Leopold Casella & Co., Frankfort, aniline colors; Johann Cleaver, Werden-on-the Ruhr, salicylic acid dentifrice, and fixative for pencil and crayon drawings; The Nurnberg Ultramarine Works have a pyramidal case filled with great lumps of ultramarine color. Brueckner, Lampe & Co., have powdered gums, roots, seeds, and flowers, which are impalpable, and a very handsome lot. E. Sachsse & Co., show an elegant lot of essential oils; F. Wolff & Son, of Berlin and Carlsruhe, have a case of toilet soaps, etc.; J. Bernhardi, of Leipzic, shows one of the finest collection of garbled drugs in the exhibition, and some very fine essential oils. Kluge & Poeretzsch, have also some handsome samples of essential oils, and Ernest Mack some fine gelatine. Leo Hænle, of Munich, shows a case full of samples of bronze powders, which are rich in colors.

The Germans, it will be seen, come out in full force with the articles in which they excel, viz, fine chemicals. The cases are all similar in style, viz., black with gold striping, and serve to show to better advantage the size and individual qualities of the collection.

Adjoining the German and Austrian contributions are those of *Great Britain*, the crucibles and muffles in fire-clay and plumbago being the connecting links. The English wares of this sort are sent by Wood & Ivery, and by the King Brothers. The number of those exhibiting crude and refined alkalies and salts is relatively large, the following houses being represented: The Newcastle Chemical Works; The Lion Alkali Works Co.; J. Corbett, of the Stoke Prior Salt Works; Peter Spence, of the Pendleton Alum Works, Manchester, a large cake of alumino-ferric alum; Runcorn Soap and Alkali Co., caustic soda, soda ash, sulphate of soda; John Hutchinson & Co., soda salts, bleaching powders, and sulphur collected by Mond's process; Gaskell, Deacon & Co., caustic soda; James Muspratt & Sons, Muspratt Brothers & Huntley, Liverpool, soda salts; Chance Brothers' Alkali Works, near Birmingham; Greenbank Alkali Co.

The paint and varnish men are next in point of numbers, and comprise David Storer & Sons, Glasgow, colors; Geo. Rowney & Co, London, permanent colors and artists' materials—a beautiful display and handsome goods; Chas. Turner & Sons, of London & Paris, dry colors, and varnishes as well; Johnson Brothers; Craig & Rose, of Edinburgh and London and Glasgow, dry and oil colors, and varnishes; John Mackey, of Edinburgh, varnishes. C. Bowman exhibits stencil inks, and Blackwood & Co. their jetoline marking ink; samples of drawings done with this ink upon both cloth and paper show its qualities. H. & J. Field, of Lambeth Marsh, London, show their candles and other wares in stearine and wax, very conspicuous among which is a life-size bust of Abraham Lincoln. J. & E. Atkinson make a large and fine display of toilet articles; and A. & F. Pears, of London, show their specialties in transparent soaps. F. Crace Calvert & Co., of Manchester, are exhibitors of their specialty, viz.: phenol compounds, chief among which were carbolic acid soap, and cresylic, carbolic and picric acids. Allen & Hanburys, of Plough Court, London, are exhibitors of cod-liver oil, jujubes, and glycerine preparations. Geo. Waterston & Son, of Edin-

burgh, send handsome specimens of different varieties of sealing-wax, under their trade-mark of "The First Wax Maker."

Lastly, the only houses which make any contribution of fine chemicals are those of J. Morson & Son, of London, who have a pretty large assortment, including fine alkaloids of various kinds, some beautiful glacial phosphoric acid, suppositories in great variety, and samples of their charta sinapis. The other is that of J. & H. Smith & Co., of Edinburgh, whose fine chemicals, alkaloids, and their salts, are exceptionally excellent. A good instance of the size of their display is a specimen of muriate of thebaia, which is the product of several thousand pounds of opium. We were rather disappointed at the smallness of the collections and number of exhibitors of chemicals, and the almost entire absence of pharmaceutical preparations. The cause of this is very apparent, in the prohibitory tariff which excludes such goods from our market, and leaves no incentive to foreign manufacturers to go to the expense and trouble of exhibiting their wares.

In the *French Department* everything was chaotic, so far as relates to drugs and chemicals. Only the following manufacturers had, at the time of our visit, unpacked their goods or arranged their cases. Coignet, Father & Son, of Paris, the extensive manufacturers of gelatine and glue; Hardi, Milori & Co., dry colors; F. Richter, of Lille, ultramarine, and E. Cortz & Co., of St. Denis, dye extracts. The following names appeared upon empty cases, or those which had been partly filled, viz.: Rigollot, Hottot, Delamotte, Bondeau Frères Sr's, A. Perrier, Jacquand Fr. & Fr's, Berthoud & Co., Vergne & Chose Frères, Benac, Briere, Seurin, Ronault, Vié. Garnier, Vicat, all of Paris, and Ad. Kaulek, of Puleaux; Dubois, G. Bubaton & Co., Boude & Fr's, and A. Julien & Co., of Marseilles; Guimet, and Grenoir Fils & Co., of Lyons; Salvay & Co., and also another exhibitor, who was prepared with a large and handsome exhibit of perfumery, viz.: Rigaud & Co.

Beyond the French comes the *Swiss* section. Here we find a number of familiar names, viz., Nestlé's lacteous farina, Lapp's Swiss lacteous farina, Gerber & Co., of Thun, lacteous farina and condensed milk; Bindschädler & Bersch, of Basel, aniline dyes; Durand & Huguenin, also of Basel, pharmaceutical sundries; Braunschweiler & Son, San Gall, mks and mk-powders; T. Braunschweiler, casein-glue and casein for calico stiffening, and Durien, Oettle & Co., "Soupe Lactée" and cordials.

The *Belgian* contribution of drugs, chemicals, etc., is unimportant compared with many others. Schaltin, Pierry & Co., of Spa, send their "Elixir de Spa," and a case of liqueurs. Fremery & Co., of Vervier, send samples of their oils for oiled cloths. G. Van Laer exhibits chemical colors. G. J. Gelkenet has a case filled with what seemed to be bottles of a preparation for removing stains and dirt-spots. Ans. de Marbaix, of Anvers, sends "Eau d'Anvers;" Ernest Solvay, soda and chemical products, and E. Remy & Co., of Anvers, starch; Hector Manceau, the well-known publisher of medical and scientific books, has a stall among the works of those who have, through him, made their labors known. Just as we are leaving, a triad of respectable looking men come by, and reading upon the case, "Hector Manceau, Libraire," one exclaimed, "A nigger from Liberia, eh? Well, I suppose they must have a chance!" What a source of information an International Exhibition must be to some people!

To come, now, nearer home, we find the Canadian Exhibit occupying a section of the space assigned to Great Britain. In this department nearly everything has been collected under the supervision of the Geological Survey, and the display is consequently very interesting. A range of glass cases, separating the space from the main department, are filled with the objects which most interest us, viz.: Canada petroleum and its products, contributed by Waterman Bro's, of the Atlantic Petroleum Works, London, Ont.—one of the handsomest exhibits of petroleum in the building—Fluid extracts, manufactured by William Saunders, Dundas St., London, Ont. Lyman Bro's of the Toronto Chemical Works fill a case with extracts, syrups, ethers, solutions, gum, good drugs, and packages of condition powders, and alkali for soap-making.

Savage exhibits his well-known "Ursina," and Lyman, Clare & Co., of Montreal, exhibit powdered drugs. Among the minerals, the Dominion of Canada Plumbago Company show crucibles of their manufacture of different grades of fineness, and some which have undergone practical use in this country and in English works. A noticeable feature of their exhibit is a lump of pure graphite weighing 4,870 lbs.

The manufacturing chemists and druggists of the *United States*, and the paint, oil and varnish trade, make, of course, the largest display. Indeed, there is no industry in the country which is better represented in the main building than this. Considering the number of "patent medicine men" which we have among us, we were somewhat surprised that we should find so few evidences of their participation in an enterprise which would offer them such opportunities for advertising their wares; almost the entire exhibit being confined to the "legitimate trade," if we may use the expression. It is useless to attempt in our present limits anything more than a recapitulation of the names of exhibitors. The general character of their wares is well known, but each one has one or more specialties, as a rule, and these shall receive future attention.

Without any attempt at classification, we give their names in the order in which we find them:—

McKeone, Van Hagen & Co., laundry and toilet soaps.

Tuft, of Boston, has two beautiful mineral-water fountains.

Rosengarten & Sons, of Philadelphia, a large case full of their wares.

Frederick Stearns, of Detroit, a case of sugar-coated pills, fluid extracts, powders, tinctures, elixirs, cerates, etc.

Frederick Brown, of Philadelphia, his essence of Jamaica ginger and a number of elixirs.

Mellor & Rittenhouse, of Philadelphia, liquorice.

F. S. Pease, of Buffalo, oils.

Powers & Weightman, of Philadelphia, Cinchona and its compounds, in great variety of forms; fused and crystalized nitrate of ammonia; purified citric and tartaric acid and alum salts.

Harrison Brothers & Co., painters' colors, acids, etc.

C. T. Raynolds & Co., of New York, paints and artists' material.

Wyeth, of Baltimore, compressed and sugar-coated pills, suppositories and elixirs.

Chas. Moser & Co., of Cincinnati, dry paints.

John Lucas, of Philadelphia, paints and varnishes.

Geo. S. Coyne, of Philadelphia, dye woods and extracts, acids and chemicals.

Billings, Clapp & Co., of Boston, fine chemicals and pharmaceutical preparations.

Blair's prepared wheat flour.

The Philadelphia Quartz Co., silicate of soda in various forms.

Browning & Brothers, dye-stuffs.

Crew, Moore & Levick, of Philadelphia, petroleum products.

The Waterville Mills, dye-stuffs.

Gantz, of Duane street, N. Y., "Sea Foam."

William F. Simes & Son, of Philadelphia, compressed camphor.

Bullock & Crenshaw, of Philadelphia, dragées and granules, sugar-coated.

Silliman Chemical Works, Philadelphia.

Robert Shoemaker & Co., of Philadelphia, samples of powdered drugs and fluid extracts.

J. Hambleton & Sons, Philadelphia, toilet articles, perfumes and cosmetics.

Hance Brothers & White, Philadelphia, samples of their drug-mills, and a case filled with pharmaceutical products.

McKesson & Robbins, New York, a case of pharmaceutical products, and selected drugs.

McIlvane Brothers, of the United States Mills, dusted and powdered drugs.

R. A. Cheesbrough Manufacturing Co., vaseline.

American Wax-Match Co.

John C. Baker & Co., Philadelphia, cod-liver oil preparations, and citrate of magnesia.

W. R. Warner & Co., Philadelphia, lozenges, pepsine, elixirs, troches, and a very large line of sugar-coated pills.

Keasby & Mattison, Philadelphia, granular effervescing preparations, pepsine, and gelatine coatings.

Charles T. White & Co., of New York, fine chemicals and alkaloids.

J. W. Colton, extracts and flavoring essences.

Wenck, of New York, perfumes.

Johnston, of New York, dry, sized, kalsomine colors.

W. J. M. Gordon, Cincinnati, glycerine, and sugar-coated pills, iron scales and crystals.

Hoyt's German Cologne.

C. R. Taylor & Co., Philadelphia, perfumery and toilet articles.

Eastman & Brooke, Philadelphia, soaps.

Robinson Bro's & Co., Boston, soaps.

W. Zinsser & Co., New York, salicylic acid tincture, sealing-wax and colored varnishes.

A. W. Dodd & Co., cod-liver oils.

Thomas Worsley & Co., soaps.

The Atwood Cologne, New York.

W. H. Savournin, Philadelphia, toilet articles.

S. C. Upham, Philadelphia, Cologne and Florida water.

J. L. Cragin & Co., Philadelphia, Dobbin's Electric Soap.

J. Earvenson & Co., soaps.

Hale & Parshall, Lyons, N. Y., oil of peppermint and other essential oils. H. G. Hotchkiss, Lyons, N. Y., do.

J. B. Williams, Glastonbury, Conn., soap.

W. H. Read, Baltimore, Cologne.

Colgate & Co., New York, soaps and perfumes.

R. & G. A. Wright, Philadelphia, toilet articles, perfumes, &c.

Arthur Fricke, Philadelphia, toilet articles.

Samuel Campbell, Philadelphia, pharmaceutical products.

D. Sultzberger, Philadelphia, flavoring extracts, essential oils, &c.

Wolf Brothers & Keech, Centreville, Mich., essential oils.

D. R. Da Costa, Philadelphia, perfumery.

California Distilling Co., pure fruit extracts.

Fritzsche & Schimmel, New York, oils and essences.

E. Scheffer (R. A. Robinson & Co., Agents), Louisville, Ky., pepsine in various forms.

Malcom & Stevenson, Philadelphia, flavoring extracts.

Henry Titlow & Bro., Philadelphia, soaps, perfumery and cosmetics.

Burdett, flavoring extracts.

Preston & Merrill, yeast.

Lewis U. Bean, Philadelphia, paints, drugs and perfumes.

Condit, Hanson & Co., Newark, N. J., acids, dye-stuffs, chemicals, &c.

Kurlbaum & Co., Philadelphia, camphor and pharmaceutical products.

Charles Pfizer & Co., New York, fine chemicals and alkaloids.

James Meyer, Jr., & Co., New York, Jerondin disinfectant.

Whitehall, Tatum & Co., Phil., New York and Balt., chemical and pharmaceutical glass-ware.

Gohansey Glass Manuf'g Co., Philad., bottles.

The Pittsburgh glass men unite to fill one long case, in which Bakewell, Pearsall & Co. are the only ones exhibiting druggist's glass-ware.

Lundborg's perfumery.

Lorenz, perfumes.

The Woodwards, of Rochester, had a large case which they filled some time since with essential oils, and covered closely with muslin.

Henry C. Blair & Son, Philad., elixirs, powders, perfumes, dentifrices, &c. Fairbanks' syringes, prepared wheat flour, etc.

Browning & Brothers, dyes.

J. M. Sharpless & Co., dye-stuffs.

J. Raynald, Philad., inks.

Maynard & Noyes, inks.

Howe, Philad., inks.

Carter, Dinsmore & Co., Boston and N. Y., inks and mucilage.

Warden & Oxnard, Pittsburg, "Elaine" oil.

Samuel Wetherell & Bros., Philad., white-lead and lead colors.

George S. Coyne, dye-woods, lye extracts, acids, &c.

Loper, Doughten & Co., Philad., naval stores.

Mackeon, Bower, Ellis & Co., plasters, charcoal, effervescing salts, extracts, lozenges, solid extracts, pills, etc.

J. G. Dreyfuss, N. Y., argols, pure and refined, cream tartar.

Pratt's oil, naphtha, gasoline, etc., New York.

Pennsylvania Salt Manuf'g Co., kryolith and its products.

John T. Lewis & Bro., Philad., dry paints.

Daniel H. Gray, New York, sulphur.

Page, Kidder & Fletcher, Palisade Chemical Works, coal-oil and its products.

John W. Masury & Son, painters' colors.

Heller & Mertz, New York, American Ultra-Marine Works.

Twining & Schmidt, Philad., pharmaceutical chemicals, etc.

E. F. Houghton & Co., Philad., "Cosmoline" and cerates, ointments, &c., made with it as a base.

Gest & Atkinson, Cincinnati, oils, candles, lard, &c.

Felton, Rau & Sibley, Philad., varnish and japan.

Dupont Gunpowder Co., show samples of nitre.

Bihn & Co., lampblack. Charles Lanning, alums.

Pecora Paints, of Philad., have more show card than paints.

C. West & Sons, of Baltimore, "Aladdin Security Oil."

Wm. King & Co., "Excelsior Burning Oil."

Haskins, of Philad., petroleum.

Valentine & Co., of New York, show their varnishes.

We had not time to look after the display of medical and surgical instruments, the ambulance materials, hospital appliances, etc., nor to do more than notice that Bœricke & Tafel, and Smith of this city, among the providers for homœopathic needs, had handsome cases and elegant samples.

We presume our list of exhibitors is far from accurate, but it will give an idea of the completeness of the exhibition in the lines of business enumerated. Some of the stands were as handsome as enormous plate-glass mirrors, marble slabs, polished woods and wood carving could make them, and the samples exhibited were sometimes enormous — like the chloride of propylamine of Billings, Clapp & Co., the coated pills of Warner, and the cinchona alkaloids of Powers & Weightman. The kiosk of Lundborg's perfumes must have cost a small fortune, and the grove of palm trees in which Wenck has located his stand, with its trellis of artificial flowers, is pleasantly suggestive of tropical odors, and will probably help business.

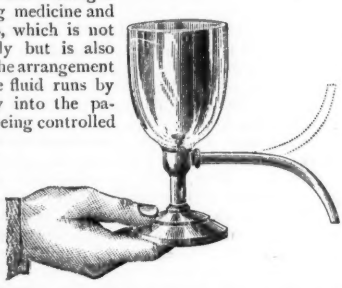
Whoever expects to "do" the exhibition in a couple of days will be very much mistaken. We worked over thirteen hours consecutively, and were able to get only a superficial view of what we have mentioned, without visiting either the grounds, or other of the exhibition buildings. When everything is arranged, and agents and exhibitors are prepared to attend to visitors, sight-seeing will be somewhat easier; and those who wish to attend for the purpose of examining special articles will do well to wait for two or three weeks until the preparations are more nearly complete.

Just as we are about going to press, we find in the *Tribune* an announcement of the Judges of the Exhibition. The list is not yet completed, but stands as follows: GROUP I., *Minerals, Mining and Metallurgy:* A. L. Holley of N. Y., T. S. Hunt of Mass., E. Harrison of St. Louis, J. S. Reeves of Penn., S. B. Axtell of New Mexico, J. W. Mackey of Nev., Matthew Addy of Ohio, J. D. Hague of Cal., W. S. Keyes of Nev., Fred Prince, Jr., Isaac Lowthian Bell, M.P., Gr. Br., M. Simonin, Fr. GROUP III., *Chemistry and Pharmacy, including the Apparatus:* C. A. Joy of N. Y., F. A. Genth of Penn., J. L. Smith of Ky., C. F. Chandler of Penn., Prof. Odling, F.R.S., Gr. Br., M. Kuhlman, Fr. GROUP XXIV., *Instruments and Apparatus of Hygiene, Medicine, Surgery, Prosthesis, etc.;* Drs. C. B. White of New Orleans, and J. Henry Thompson of Washington.

PHARMACEUTICAL SUNDRIES AND NEW INSTRUMENTS.

A Feeding and Medicine Cup.

MANY will remember Miss Nightingale's remarks about the discomforts which the sick often suffer from lack of attention to such simple matters as seeing that the bottom of a cup or glass is dry, and not dropping food or medicine on to their clothing: and that the person who attempts to hold the cup or glass while they drink shall have the knack of tipping it so that they can get just what they are able to take comfortably. The use of a bent glass tube is often resorted to, but it requires the patient to exert a suction force which, though but slight, is often more than he is capable of, and he becomes tired before he has enough.

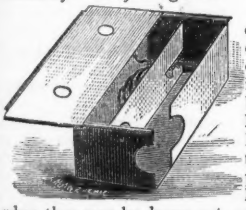


MCNEIL and WASHBURN, of 28 Centre Street, New Haven, Conn., are making a goblet for giving medicine and food to invalids, which is not only very handy but is also ornamental. The arrangement is such that the fluid runs by its own gravity into the patient's mouth; being controlled by a valve in the bottom of the bowl. The valve-rod passes through a tight packing in the standard; is encircled by a spiral spring which holds the valve tight in its seat, and terminates in a button under the base of the cup. Moderate pressure with the finger on the button raises the valve, and the fluid passes out through the tube. If desired, the tube can be rotated to any position, or it can be entirely removed and a screw-cap adjusted in its place, giving the cup the appearance of an ordinary metal goblet.

Several styles are furnished by the manufacturers, varying from plain Britannia metal to silver plated and engraved, with gilt lining.

The Dorrance Patent Label-Box.

MR. R. G. DORRANCE, of Cold Water, Mich., has invented an ingenious little box for holding the labels in use by the druggist and pharmacist, which was noticed in NEW REMEDIES on page 120 (Patent No. 173,453), and is illustrated by the adjoining cut:

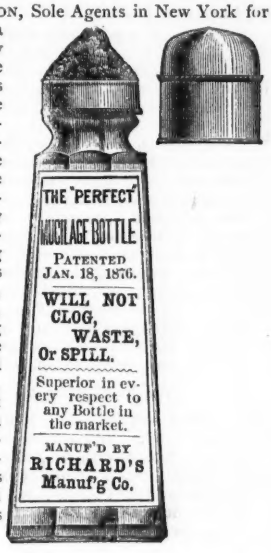


It consists of a sliding cover of tin, which is intended to be fastened to the under side of a shelf, or the inside of a drawer; and the box, after being filled with labels, is shoved into place. Inside the box, and controlled by a spring is a diaphragm, which presses the labels against the opening, when they may be drawn out, so that it is easy to get one, whether the box is full or nearly empty.

By attaching a box with its labels under each bottle as it stands in place on the shelves, a label can be drawn at the same time that the bottle is taken down for dispensing its contents, and the label thus serves as a check against mistakes. The price at which they are advertised to be sold ($3.50 per doz.) will prevent, we fear, the use of the box to the extent which its merits deserve; but any one who is willing to be at the expense of a set will surely find that, with a set of gummed labels, the labeling of bottles will be reduced to a very simple affair, and his labels will always be neat and tidy, and just where they are wanted in practical use.

A New Mucilage Bottle.

JOHN NATHAN AND SON, Sole Agents in New York for this novelty, send us a sample of Wilcox's new Mucilage Bottle and the adjoining cut, which is about two-thirds the size of the original. A conical piece of sponge attached to the neck of the bottle serves to apply the mucilage and entirely dispenses with the necessity for a brush, besides preventing the gum being spilled when the bottle is overturned. A metal cap, shown also in the cut, prevents the gum drying in the sponge when the bottle is not in use, and protects it also from dust. We are using the one sent to us on our table, and can appreciate that the apothecary would find it a convenient addition to his prescription counter, and the business man to his desk.



TRADE NOTES.

Extract of Malt.

We have received the following communication:

"DEAR SIR:—The high price of the imported *Extract of Malt and its compounds* is principally the cause of their not having come into more general use. To bring these valuable preparations within the reach of every one, I have undertaken the manufacture of the same, and hereby take the liberty of recommending them to your attention. They are prepared with the greatest precision and care, and are already favored by many physicians.

"FRED. TOUSSAINT, *Pharmacist and Chemist*,
"130½ Essex St."

Accompanying the above was a sample of Concentrated Extract of Malt, of really excellent quality, purity of taste, and without a trace of overheating. We think Mr. Toussaint deserves credit for the care bestowed upon its preparation.

Warburg's Tincture.

MR. F. ALFRED REICHARDT, Pharmacist, of 404 Fourth Ave., advises us that he has prepared and keeps on stock *Warburg's Tincture*, made strictly after the original recipe. (SEE NEW REMEDIES, Jan., p. 2.)

Professor Rose has been restored by the Regents of the Michigan University to his place in the College laboratory. The charge, that Professor Douglass of the College laboratory had received commissions on his purchases, has proved unfounded, and the deficit of $7000 in the accounts is to be investigated.

NEW PATENTS AND LAWS.

TRADE MARKS REGISTERED IN THE U. S. PATENT OFFICE.

The application of Dundas Dick & Co. to register as a trade-mark the following symbol:

D. D. & Co.,
Tasteless,

the letters D. D. & Co. having been recently added as an amendment, the word "Tasteless," originally comprising the whole of the proposed trade-mark, was rejected by the Examiner and the Acting Commissioner of Patents. On the 8th of March this decision was sustained by the Commissioner. The ground of the decision was, that the word was purely descriptive, and used in its ordinary signification; that it could not be considered in this case as a word arbitrarily chosen; and that it was either descriptive or untrue. "An exclusive use," it was said, quoting from *Wolfe* vs. *Goulard* (Cox's Am. Trade Mark Cases, 229), "can never be successfully claimed of words in common use previously applicable to similar articles."

Certificates dated March 21, 1876.

3,518. **Tonic Bitters.**—Harrison T. Chamberlin, Brockport, N. Y. Application filed March 3, 1876. Words, "'Crown Bitters,' and the picture of a crown."

3,521. **Cosmoline, a Product of Petroleum.**—Edwin F. Houghton, Philadelphia, Pa. (Re-registration.) Application filed Sept. 9, 1870. "Pictorial representation of a globe."

Certificates dated March 28, 1876.

3,530. **Salve.**—William Dulty, Jr., near Burlington, N. J. Application filed March 2, 1876. "Word 'Cosmopolitan.'"

3,540. **Pile Ointment.**—Elizabeth M. Armstrong, Columbus, Ohio. Application filed Feb. 19, 1876. "Figure of a shield, having a monogram thereon composed of the letters 'E. M. A.' together with the words, 'Armstrong Pile Ointment.'"

3,541. **Opium Antidote.**—Samuel B. Collins, La Porte, Ind. Application filed Feb. 14, 1876. "Figure of a lion, having a card or hand-bill on his side with my name and the words 'Opium Antidote' on it."

3,544. **Extract of Anatto.**—Wells, Richardson & Co., Burlington, Vt. Application filed Feb. 19, 1876. "Words and letters 'Wells, Richardson & Co.'s Golden Extract of Anatto.'"

3,545. **Baking Powder.**—Young, Patterson & Co., Minneapolis, Minn. Application filed Jan. 28, 1876. "Words 'Model Baking Powder,' and the monogram Y. P. & Co.'"

LABELS REGISTERED IN THE U. S. PATENT OFFICE.

Certificates dated March 21, 1876.

596. **"Brown's Bronchial Elixir."**—Nathaniel K. Brown, Burlington, Vt. Application filed March 13, 1876.

600. **"Diamond Worm Powders."**—George H. Marvin, Buffalo, N. Y. Application filed March 4, 1876.

606. **"Centennial Tea Bitters."**—David S. Stansberry & Frank C. Haines, Newark, N. J. Application filed March 14, 1876.

607. **"J. M. Laroque's Liquid Anti-Bilious Bitters."**—William E. Thornton, Baltimore, Md. Application filed March 14, 1876.

108. **"Weaver's Bay Rum. The Toilet Article."**—James B. Weaver, Philadelphia, Pa. Application filed March 16, 1876.

609. **"The Weaver Cologne."**—James B. Weaver, Philadelphia, Pa. Application filed March 16, 1876.

610. **"Berlin Herb Tea."**—Weidenfeld & Co., New York, N. Y. Application filed March 11, 1876.

611. **"Lundborg's Novel Box Recherche Perfumes."**—Young, Ladd & Coffin, New York, N. Y. Application filed Feb. 10, 1876.

Certificates dated March 28, 1876.

613. **"Wm. G. Bell & Co., Spiced Dressing."**—William G. Bell & Co., Boston, Mass. Application filed March 20, 1876.

614. **"The Centennial Enema Syringe."**—James J. Essex, Newport, R. I. Application filed March 20, 1876.

615. **"The Great English Remedy."**—Haslett & Gladding, Constantine, Mich. Application filed March 17, 1876.

616. **"Sure Cure—Mrs. Ida Ludwig's Cholera Drops."**—Ida Ludwig, Chicago, Ill. Application filed March 16, 1876.

621. **"Dr. Shepherd's Wine of Health."**—Stephen Shepherd, Atlanta, Ga. Application filed March 20, 1876.

622. **"Chinese Compound Washing Crystal."**—The American Lye Company, Philadelphia, Pa. Application filed March 16, 1876.

623. **"American Best Baking Powder."**—The American Lye Company, Philadelphia, Pa. Application filed March 16, 1876.

629. **"Dr. Quain's Magic Condition Pills."**—Thomas W. Lane, Manchester, N. H. Application filed March 18, 1876.

630. **"McEvoy's Original Ka-Lye."**—James McEvoy, Pittsburg, Pa. Application filed March 24, 1876.

631. **"Concentrated Chemical Tobacco Soap."**—William H. Primer, New York, N. Y. Application filed March 22, 1876.

632. **"Dr. Puchta's Infallible Rheumatism Cure."**—Charles Puchta, New York, N. Y. Application filed March 22, 1876.

635. **"The Great Modern Panacea."**—M. H. Thorpe, Coffeeville, Miss. Application filed March 24, 1876.

NEW PATENTS.

[*We will furnish gratis, to subscribers, any information relating to new patents which can be obtained from the Official Gazette of the Patent Office; and for* 50*c. will give copies of the drawings of such as are illustrated.*]

Patents granted March 21, 1876.

174,890. **Baking Powders.**—Charles Arnois, Brooklyn, Assignor to Dodge & Olcott, New York, N. Y.

174,917. **Indelible Inks.**—D. M. Marshall, Columbia City, Ind.

174,921. **Processes and Apparatus for Manufacturing Illuminating Oils.**—C. L. Morehouse, Cleveland, Ohio.

174,934. **Can-Shields.**—Geo. W. Banker, Brooklyn, N. Y.

174,938. **Processes of Preserving Meat.**—Andrew Bertch, Lansing, Mich.

174,962. **Trusses.**—De Lancy Kennedy, New York.

174,971. **Oil-Squeezers.**—Hans Olsen, Montreal, Canada, Assignor to E. Rawlings, same place.

175,014. **Apparatus for Increasing the Density of Oils, &c.**—William H. Birge, Franklin, Pa.

175,029. **Trusses.**—Edward A. Campbell, Hastings-on-the-Hudson, N. Y.

175,046. **Dental Articulators.**—George G. Davidson, Lambeth, Great Britain.

175,049. **Reducers for Syphon Bottles.**—Edwin Deblieux, New Orleans, La.

175,066. **Filters for Drugs.**—Carroll E. Gates, Saratoga Springs, N. Y.

175,111. **Magnetic Machines.**—J. Kidder, New York, N. Y.

175,112. **Galvanic Batteries.**—Frederick C. Kinemund, Baltimore, Md.

175,124. **Bottle-Stoppers.**—Adolph Luthy, New York, N. Y.

175,134. **Processes of Electro-plating.**—C. S. Minchen, Taunton, Mass., assignor to Reed & Barton, same place.

175,178. **Demijohns.**—David H. Shourds, Philadelphia, Pa.

175,189. **Electro-Magnetic Dental Mallets.**—Allen Spencer, Columbus, Ohio, assignor to Samuel S. White, Philadelphia, Pa.

175,202. **Medical Rubbing Apparatus.**—George H. Taylor, New York, N. Y.

175,221. **Combined Shoulder-Braces and Suspenders.**—H. C. Whitmarsh, Brooklyn, N. Y.

Patents granted March 28th, 1876.

175,274. **Remedies for Rheumatism.**—John F. N. De Flor, Alexandria, Minn.

175,291. **Refrigerating Processes and Apparatus.**—Samuel D. Lount, Chattanooga, Tenn.

174,296. **Curing Tobacco.**—John R. Opitz, Anheim, Cal.

175,342. **Carbonic Acid Gas Generators.**—H. W. Dopp, Buffalo, N. Y., assignor to Dopp Manufacturing Co., same place.

175,343. **Liquid Coolers.**—John Donning, Binghamton, N. Y.

175,346. **Nutmeg-Graters.**—S. W. Gear, Cambridge, assignor to Dover Stamping Company, Boston, Mass.

175,351. **Bung Extractors.**—William Heinle, Lancaster, Pa.

175,359. **Pyrotechnic Signals.**—Edward F. Linton, East New York, N. Y.

175,360. **Magneto-Electric Machines.**- Thomas W. Livingston, Ainsworth, Iowa.

175, 371. **Apparatus for Filling Cans.**—G. Lewis Merrill and Oscar F. Soule, Syracuse, N. Y.

175,403. **Barrel Washers.**—Albert Zoller, Hoboken, N. J.

175,445. **Gas Purifiers and Regulators.**—Leander E. Fish, Washington D. C

175,448. **Insect-Powder Packages.**—John N. Gerard, Elizabeth, and H. J. Jaquith, Jersey City, N. J. [See NEW REMEDIES, page 56]

175,468. **Refrigerating Apparatus.** — K. Knott, Chicago, Ill.

176,470. **Pill Machines.**—Charles W. Le Count, South Norwalk, Conn.

175,483. **Processes for Preserving Meats.**—Hyppolyte Mege, Paris, France.

175,489. **Acid Syphon Pumps.**—F. Nichols, New London, Conn.

175,492. **Flax-seed Sieves.**—Hugh Pinner, De Soto, Kansas.

175,498. **Ice Machines** —Thos. L. Rankin, Emporia, Kansas.

175,505. **Dental Rubber-Dam Punches.**—John Rix, Fort Madison ; and P. T. Smith, Burlington, Iowa.

175,506. **Spirit-Lamps.**—Sylvanus S. Robinson, Holden, Mo., assignor of one-half his right to W. M. Coventry, same place.

175,508. **Filters.**—Bradhurst Schieffelin, Atlanticville, N. J.

175,519. **Educational Puzzles.**—Emil Steiger, Prairie du Chien, Wis., assignor of one-half his right to George M. Rising. [Dissected puzzles applied to an anatomical design.]

175,535. **Grinding-Mills.**—O. P. Webber, Charlotte, Mich.

175,536. **Apparatus for the Manufacture of Gas.**—Adam Weber and Ignatz Herzog, New York, N. Y., and Augustus T. Schnessler, Newark, N. J.

175,543. **Refrigerators.**—Jas. H. Wickes, New York, N. Y.

NOTES, QUERIES AND ANSWERS.

[*Under this heading we shall, to the best of our ability, endeavor to answer such questions addressed to us as come within the scope of this journal, providing they are accompanied by the name and address of the writer. Answers to queries received after the 5th of the month will lie over until the next issue.*]

J. G. B., (O.).—*Walnut-oil* is obtained by cold expression from the kernels of *Juglans regia* L., in which it exists to the amount of 35 to 50%. It is first greenish, then turns yellow, is odorless and has a mild bland taste. It has a spec. gr. of 0.928 at 12° C, solidifies at 18° C, becomes easily rancid, and has drying properties. It is used as table oil, and in oil-painting. An inferior kind, only serviceable for burning, is obtained by hot expression.

O. A., (Elmira).—*Vegetable Ivory* is the hardened juice of the kernel of *Phytelephas macrocarpa*, or negrito-palm. This tree does not attain a very large size, and prefers damp, shady bottom-lands. Its proper home is Ecuador (see also Jan. number, page 31). The fruits grow immediately under the leaf-crown, on the stem of the tree, and are large brown drupes in which the nuts are gradually developed. While still unripe, these nuts contain a cool liquid of a mawkish taste ; on further ripening, a gelatine-like layer of very agreeable taste attaches itself to the inner wall of the shell. Later, however, this jelly turns into a tough tasteless mass, which constantly increases in hardness, until it becomes as dense and hard as ivory, of white color, with a faint bluish tinge, and is used for the manufacture of various ornaments and toys. The name of the nut in Guayaquil and Quito is *Coroso, Corosso*, or *Corusco;* elsewhere they are known under the name of *Tagua* nuts.

K. D., (N. Y.).—*Piffard's* method of urea-estimation is based upon the decomposition of urea by mercuric nitrate, at a temperature of between 60° and 70° F, during the space of 50 minutes. His process is as follows: 10 cc. of urine are placed into a small flask provided with a perforated cork, which carries a short gas tube for the escape of gas, and a glass-stoppered test-tube, drawn out in its lower half to a rather narrow diameter. The latter is previously charged with 10 cc. of a solution of mercuric nitrate (prepared by dissolving 1 cc. of metallic mercury in 20 cc. of HNO_3, spec. gr. 1,400, and diluting afterwards with 20 cc. of water), the stopper inserted, and the whole apparatus weighed. The fluids are now permitted to mix, by merely lifting up the stopper of the test-tube. The stopper having been replaced, the flask is set aside, and again weighed after the lapse of 50 minutes. Dr. Piffard has ascertained that under these conditions the loss of weight, by escape of carbonic acid and nitrogen, so nearly equals the weight of urea originally present, that in practice this method appears preferable to all others. The real loss observed is in general about one per cent. greater than the exact amount of urea in the specimen.

W. S. Br. (O.)—The laconic brevity of your communication, which would otherwise be a very praiseworthy feature, has somewhat overshot its mark ; however, we will give you all we know on the subject. "Dogberry" is the fruit of "*Cornus sanguinea, L.,*" commonly called Gutter-tree, Dogwood, Dogberry-tree, or wild Cornel, the seeds of which yield a very pleasant oil, which has been recommended as a substitute for fine salad-oil ; any Flora of England will furnish you the necessary botanical information.—We would also suggest to you to consult "Much Ado about Nothing," where you might perhaps encounter another "Dogberry."

G. K., Indianapolis.—To impart to hair a *reddish* color, inclined to *golden yellow*, free from injurious metallic elements, may be prepared by boiling pure annatto in water made slightly alkaline by addition of carbonate of soda or potassa; this solution, when applied to very pale hair, gives it a golden yellow or flame yellow tint, according to its strength, and a corresponding deeper shade to darker hair. A previous mordant of alum-water deepens it, and a subsequent washing with water acidulated with citric or acetic acid reddens it, or turns it on the orange. The color may be somewhat modified by adding to the hot solution of annatto a sufficient quantity of red onion skins.

G. and L., Baltimore.—We believe that either of the following formulæ will make a fine *Cologne*, and probably as near to the one which you inquire about as possible:

Oil of Neroli	4 oz.
" Citron	5 oz.
" Bergamot	4 oz.
" Orange	5 oz.
" Melisse	1 oz.
" Rosemary	1 oz.
Deodorized alcohol	5 gallons.

Mix by agitation; then allow it to stand a few days perfectly quiet before bottling.

Another:

Oil of Bergamot	2 oz.
" Neroli	2 drachms.
" Jasmin	½ oz.
" Garden lavender	¼ oz.
" Cinnamon	1 drop
Benzoated tincture (8 oz. benzoin to 5 pints alcohol)	3 oz.
Essence of musk	½ oz.
Rose-water	2 pints
Deodorized alcohol	1 gallon.

After mixing, allow to stand as long as possible before using.

S. S. (Brooklyn).—Carbon disulphide is purified in various ways. The usual method has been to agitate it with salts of mercury until the latter ceased to be affected. In place of mercurial salts, S. Kern has recommended the cheaper salts of lead. By repeatedly digesting and agitating the liquid with nitrate of lead and metallic lead until fresh quantities of the latter are no longer blackened, and finally distilling, nearly all foreign sulphuretted compounds may be removed. Animal charcoal may also be used to advantage.

J. H. H. (Baltimore).—We are not aware of any such preparation as you inquire about. But there is a formula for an aqueous solution of *bromide of iodine* in use, which is as follows: Rub 10 parts of iodine with 40 parts distilled water, introduce them into a flask, add 20 parts of bromine, and shake until the iodine is dissolved. Then add 530 parts of distilled water, and filter if necessary. Keep the solution in *full* bottles in a cool place. 20 parts contain 1 part of iodine terbromide [IBr_3].—A solution containing 15% forms occasionally an article of trade.

W. G. W., M. D. (Sh. Illinois).—This correspondent writes that, owing to his inability to obtain *acetate of lime* for preparing a *strong solution of salicylic acid* (see this journal, pg. 44 and 77), he employed *acetate of potassa*, and obtained satisfactory results. In answer, we desire to say, that all acetates of the alkalies or alkaline earths are available for this purpose, but we chose acetate of lime, because it is cheaper than the others. In regard to the next inquiry, whether any chemical action takes place, different in the solution with acetate of potassa from that with acetate of lime, which would injure the therapeutic properties of the salicylic acid, we would state that both solutions, after standing for a time, develop free acetic acid, which is, however, not at all injurious, but on the contrary increases the antiseptic powers of salicylic acid, which are exerted preferably in *acid* solutions.

ITEMS.

College of Pharmacy of the City of New York.—At the monthly meeting of the Board of Trustees, held March 2, at their rooms in the University building, the following Standing Committees were appointed for the ensuing year: *Curators*, G. Ramsperger, Ch. Rice, G. Balser; *Property Committee*, W. M. Olliffe, Th. Frohwein, G. Ramsperger, W. Neergaard, M.D., H. A. Cassebeer, Jr.; *Lecture Committee*, E. McIntyre, B. H. Reinold, F. Hoffmann, Ph.D., M. L. M. Peixotto, Ch. Rice; *Library Committee*, Ch. Rice, F. Hoffman, Ph.D., H. A. Cassebeer, Jr.; *Committee of Reference*, D. C. Robbins, D. Hays, Wm. Neergaard, M.D.; *Examination Committee*, Ch. Rice, M. L. M. Peixotto, H. J. Menninger, M.D., G. Ramsperger, Wm. Neergaard, M.D.

American Chemical Society.—The first regular meeting of this Society was held on May 4th, at the rooms of the College of Pharmacy, Prof. C. F. Chandler presiding. Dr. H. Endemann read an interesting paper on the methods of determining the relative power of disinfectants, illustrating the same with designs and apparatus, and maintaining his views as to the propagation and transplantation of bacteria against the objections raised by Fisher and others. At the next meeting, which will be held on Thursday, June 1st, at 8 o'clock, at the same place, Mr. P. Casamajor will read a paper on "Iron-Amalgam," and Dr. Isidor Walz on "The Occurrence of Vanadium in an American Ore."

The Coming Medical Student.—We may be mistaken in our inferences, but the following letter would indicate that another incipient genius has marked out for himself a career of usefulness to his fellow-men, and decided that the profession of medicine is best fitted for the display of his talents and acquirements. We shall be happy to forward to his address the circulars of such schools as may desire to compete for the honor of directing his studies, and of claiming him, ultimately, as one of their illustrious alumni. Beneficiary institutions need not apply; for it is apparent, from the tenor of the letter, that this young man wishes to pay as he goes.—[Ed. N. Rem.]

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